Scott, William Amasa
Money and banking.

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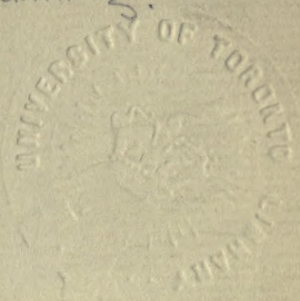

TO

My Wife,

WHO HAS RENDERED INVALUABLE ASSISTANCE
IN THE PREPARATION OF EVERY
CHAPTER OF THIS BOOK.

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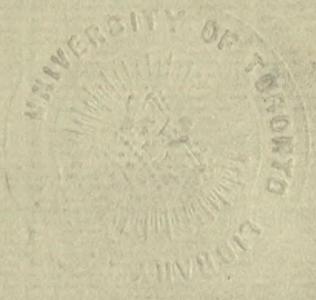

New York, Holt, 1903

PREFACE.

THE need of a suitable text or handbook on money and banking has doubtless been felt by every teacher of political economy. The complexity of the subject and the closeness of the reasoning often required render it peculiarly unsuitable for presentation to immature students in the form of lectures, and the voluminousness of the literature and the controversial character of a large part of it render a guide of some sort almost indispensable. No one of the books available for the English-speaking student covers the entire ground in a comprehensive manner, and few, if any, of them have been written with the needs of the student distinctly in mind.

The present book is the outcome of ten years' experience in teaching large classes in the University of Wisconsin, and is presented to the public in the hope that students in other institutions as well as the average citizen who wishes to understand this subject may find it useful. Its subject is modern currency, and it aims to analyze and explain the complex media of exchange of the great nations of the present day in such a way as to reveal the nature and workings of each element and the relations between them all. Besides money in the ordinary sense, therefore, it includes a discussion of banks in their relation to the currency, of the various forms of government notes, and of the machinery and methods of international exchange. In considering controverted questions, while

the author has not attempted to conceal his own views, both sides of the case have been presented, and specific references to the best literature of the controversy have been given.

A special feature of this book is the list of references given at the end of each chapter. These have been made specific, the chapter and the page, when necessary, being given, in order that the student may have no difficulty in finding what it is desirable that he should read on each topic, and no excuse for neglecting to read widely. The book is designed to be used as a guide simply and not as a substitute for the literature of the subject. While the author has definite views on the various topics treated and has presented the subject in the way which seems best to him, he has not written this volume for the purpose of propagating his personal beliefs, and desires that those who use it shall read authors who disagree as well as those who agree with him, the aim being to aid students in acquiring such a knowledge of the subject as will enable them to form rational, independent judgments for themselves. No attempt has been made to give a complete bibliography of any of the topics treated. The aim has been rather to select typical references from the best writers, and especially from those most easily available and most useful to students in the United States. Certain American books have, therefore, been frequently referred to, not because in all cases they are the best on the subject, but because in many cases they are the only ones available for students in some of our institutions of learning. Abbreviations have been used in many cases, the full title of the book being given only in the list at the end of the volume. In the case of certain books to which reference has frequently been made only the author's name is given. In every such case it should be understood

that the book referred to is the first one mentioned under that author's name in the complete list at the end.

Great pains have been taken to make the statements of fact in the book accurate, but it is hardly possible that complete success in this particular has been attained. The author will be grateful to any one who, having discovered an inaccurate statement, will apprise him of the fact, that it may be corrected, should subsequent editions become necessary.

WILLIAM A. SCOTT.

UNIVERSITY OF WISCONSIN,
November, 1902.

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MONEY AND BANKING.

CHAPTER I.

THE NATURE AND FUNCTIONS OF MONEY.

MONEY is one of those terms which political economists have borrowed from popular speech and found ill-adapted to their purposes. In spite of numerous attempts to make a suitable definition, it still lacks the precision and definiteness of meaning which should characterize scientific terminology. Popular usage is tolerably consistent and clear, but fails to include under the term all the instrumentalities which belong together in any scientific treatment of the subject, and political economists are not agreed regarding the point to which the popular meaning of the term should be extended. Even if these difficulties were removed, however, one not easy to overcome would still remain. All are agreed that under the head *money* we must include both the *standard of value* and the *medium of exchange*, two instrumentalities which perform very different functions, and the distinction between which is apt to be minimized, if not entirely overlooked, when an attempt is made to include them under one definition.

In order to avoid this difficulty and to promote clearness of thinking, we shall discuss first of all the functions of the standard of value and the medium of exchange, and, so far as possible, defer the use of the

term *money* until the student is prepared to form an independent judgment regarding the meaning which ought to be attached to it.

1. **The standard of value.**—A standard of value is any commodity by means of which people measure and express the value of other commodities. For example, when we say that a pair of shoes is worth five dollars and a coat ten, we measure and express the value of these two commodities by means of another which, for this purpose, we call a dollar. In the United States this standard commodity is gold, and to 23.22 grains of it, many years ago, Congress gave the name dollar. If our ancestors had acquired the custom of comparing the value of everything with that of a bushel of wheat, by always finding out for how many bushels each article would exchange, then wheat would have been our standard of value, and Congress might have decided to call a bushel of wheat a dollar, instead of a few grains of gold.

The acquisition of the habit of using some one commodity as a standard of measurement and a means of expressing the values of all others is characteristic of every people who have advanced beyond the most primitive stages of civilization, and is explained by the need for *a common language of value*, which made its appearance very early in the history of commerce and which demanded satisfaction before trade could play an important part in economic processes. This need may be best appreciated by imagining ourselves reduced to a state of barter. Each one would then be obliged to trade the commodity or service which is the result of his special activity directly for the various commodities and services which he needs or desires. A shoemaker would needs exchange shoes directly for flour,

butter, sugar, meat, etc.; the farmer would have to barter wheat and cattle for groceries, clothes, and agricultural implements; the labourer would have to trade his services for whatever he and his family need, etc., etc. The difficulties which would be encountered under these circumstances are many, but one of the greatest and the most fundamental would be due to the fact that each person would have a language of values peculiar to himself and difficult of comprehension by his fellows. This difficulty may be illustrated as follows:—

Suppose that A is a producer of wheat, B a cattle-breeder, C a shoemaker, D a tailor, and E a manufacturer of sugar. Each, having frequently bartered his product for each of the other commodities, would have an accurate idea of their relative values, but would be able to express that idea only in terms of his own commodity. A, for example, would think and speak of value in terms of wheat. If he had frequently traded 100 bushels of wheat for an ox, 5 bushels for a pair of shoes, 10 bushels for a coat, and $\frac{1}{10}$ of a bushel for a pound of sugar, the figures 100, 5, 10, and $\frac{1}{10}$ would represent to him the relative values of these and serve as a means of expressing them. If, on other occasions, he were compelled to give 110 bushels of wheat for the same sort of an ox as before cost him only 100, he would conclude that the value of beef had risen, and would measure the rise by comparing the figures 100 and 110. In fact, this method of expressing values would not only be natural to A, but it would be the only one possible. On the assumption that he produces wheat and wheat only, and barters it for whatever else he needs or desires, his knowledge of values would not extend beyond the ratio of exchange of wheat with other commodities.

B, C, D, and E would each likewise have one means

and only one of expressing the relative values of commodities, namely, the figures which represent the ratio of exchange of his product with each of the others. B, for example, might express the value of wheat, shoes, coats, and sugar by the fractions $\frac{1}{100}$, $\frac{1}{20}$, $\frac{1}{10}$, and $\frac{1}{1000}$, the portions of an ox exchangeable respectively for a bushel of wheat, a pair of shoes, a coat, and a pound of sugar, or by the figures 100, 20, 10, and 1000, representing the number of bushels of wheat, pairs of shoes, coats, and pounds of sugar exchangeable respectively for one ox. C's expression for the relative values of wheat, cattle, coats, and sugar would be the figures $\frac{1}{5}$, 20, 2, and $\frac{1}{50}$, representing the number of pairs of shoes and fractions of pairs exchangeable respectively for a bushel of wheat, an ox, a coat, and a pound of sugar, or the figures 5, $\frac{1}{20}$, $\frac{1}{2}$, and 50 representing the amount of wheat, cattle, coats, and sugar equivalent in value respectively to one pair of shoes. Under the same conditions of value, D, who has only coats for trading, would have to pay for a bushel of wheat $\frac{1}{10}$ of a coat, for an ox 10 coats, for a pair of shoes $\frac{1}{2}$ a coat, and for a pound of sugar $\frac{1}{100}$ of a coat; and E, who barters sugar, would pay for a bushel of wheat 10 pounds, for an ox 1000, for a pair of shoes 50, and for a coat 100.

It is thus evident that in a state of barter each man would have an accurate numerical expression for the values of all the commodities on the market, but one peculiar to himself, and consequently unintelligible to others, or at any rate capable of being made intelligible to others only by a mathematical calculation. In describing values A could only give the amount of wheat each commodity is worth; B, the amount of beef or live cattle; C, the number of pairs of shoes; D, the number of coats; and E, the amount of sugar. If a

dealer should attempt to establish in this community a store for the purchase and sale of all the goods produced, he would be obliged to quote the price of each article in terms of all the others in order to meet the needs of his customers. Were commerce at all active and large in amount, this would mean an interminable price-list and an amount of calculation which would require more time than all the other business of the establishment, to say nothing of the liability to error and the consequent danger of loss. It is safe to say that under such conditions commerce would never have assumed very great proportions or played a very important rôle in the world's history. The difficulty which these traders have met is that of a variety of methods of expressing values, and the remedy is the acquisition of a method common to all. The difficulty is similar to that which people speaking different languages would meet in trading, if no one understood the speech of the other. Each trader's language of value is peculiar to himself and not understood by his fellows. What is needed is a common language intelligible to all.

The acquisition of such a language is accomplished through the use of a single commodity as the standard for comparing and reckoning values. In our hypothetical community, for example, any one of the five commodities could be used for this purpose. On the assumption that sugar is consumed by every one and consequently frequently bartered for every other commodity, each person would know the value of his product in terms of this one, and would be able to express that value in a form intelligible to others. If A should always describe the value of his wheat by stating the number of pounds of sugar a bushel would buy, and B, C, and D in the same manner should express the value of cattle,

shoes, and coats, each would readily understand the other, and comparisons and calculations of values would be easy and simple. The figures in which such comparisons and calculations were expressed would always refer to multiples or subdivisions of a pound of sugar, and would constitute a language of value understood by every member of the community. If, in discussions of value, for convenience or any other reason, a special name were given to a pound of sugar, for example, the name dollar, franc, mark, or pound sterling, the language of value would become that employed in the United States, France, Germany, or England at the present day.

The capacity to serve as a standard of value is possessed by all commodities which are widely used and consequently frequently bought or sold. In primitive societies custom has usually caused the selection of that commodity as the standard which is most widely known and most highly esteemed among the people who have occasion to trade with each other, and in more highly civilized communities considerations of convenience and economy have usually dictated the selection of one among several articles which might conceivably be employed for this purpose. Whatever the commodity may be, however, and by whatever process selected, its function as a standard is simply that of furnishing the community with a means of measuring, expressing, comparing, and recording the values of the various articles of commerce.

2. **The medium of exchange.**—The phrase *medium of exchange* describes a group of instrumentalities which serve as a go-between in commercial transactions. In the United States it includes gold, silver, nickel, and copper coins, several varieties of government notes,

bank-notes, checks and drafts, bills of exchange, and several other kinds of documents less commonly used. Each of these is appropriately called a *medium* of exchange because it is used as a go-between in the exchange of commodities. For example, suppose a farmer brings butter and eggs to market, and wishes to exchange them for groceries. In all probability he will not make the exchange directly, but through the *medium* or by the *mediation* of coins; that is, he will trade his butter and eggs for coins and then trade the coins for groceries. A labourer wishes to exchange several days' work for a coat, but he will rarely find a tailor who needs his services, and who will, therefore, be able and willing to trade a coat directly for a certain number of days' work. Instead he will trade his services with some one who needs them for coins or government notes or bank-notes or both, and then trade the coins or notes for the coat. It is possible, and it often happens, that a considerable period of time intervenes between the first trade and the last. The farmer may sell his produce a whole year or even longer before he trades the coins or notes received for other commodities. Indeed, he may never himself complete the trade, but transfer the right so to do to some one else. In any case the coins, notes, or other documents received will be used in buying other things and will thus fulfil their mission as a medium of exchange. In the same way people use checks, drafts, bills of exchange, and various other documents.

Like the standard of value, the medium of exchange owes its existence to certain wants which were felt very early in the history of commerce, and upon the satisfaction of which further progress depended. These wants are three in number, namely: that for some means of exchanging commodities of unequal value, that for some

means of accumulating wealth in such a form as to make it available at any time for the purchase of any and all commodities, and that for facilities for borrowing and lending.

The first of these may be illustrated as follows: A farmer has an ox for sale and desires a pair of shoes. He may succeed in finding a man who has shoes for sale and wants beef, but the ox is worth twenty pairs of shoes and he wants but one, and very likely the shoemaker wants only a few pounds of beef instead of a whole ox. Manifestly the trade cannot take place unless the farmer is willing to take nineteen pairs of shoes which he does not want and the shoemaker twenty times as much beef as he wants, or unless the farmer is willing to kill his ox, to hand over to the shoemaker an amount of beef equal in value to the shoes and to keep the remainder. Of course there might be other people in the community quite willing to take the beef which neither the farmer nor the shoemaker wants, but that would not help the matter unless these traders should happen to want the various commodities which their neighbours might be willing to give in exchange for it. On the assumption that the farmer wants only a pair of shoes and the shoemaker only a few pounds of beef, the willingness of other people to buy the surplus might not improve the situation.

The need for some means of accumulating wealth is obvious. Frugal people wish to make preparations for the future, and, if the aggregate of their products exceeds that of their consumption, they are able so to do, provided some means of saving exists. The most obvious one which suggests itself is that of hoarding surplus products, but this is a very precarious method in case the products in question are perishable, or are subject

to frequent fluctuations in value or are so bulky that the process of hoarding them is very expensive. Most of the ordinary products of industry are subject to one or more of these contingencies. Hence, in the absence of some special provision for the accumulation of wealth, the risks involved are so great as to prevent saving on any large scale.

The need of facilities for borrowing and lending is equally obvious. A farmer may have no accumulations to tide him over the period during which his crops are growing, or he may wish to keep his produce for a rise in price, or he may wish to extend his agricultural operations by more fully stocking his farm, by the use of superior implements, or by the cultivation of more acres. In any one of these cases he needs to borrow, and inability to do so might seriously interfere with his prosperity. In an advanced industrial community there are always people quite competent to carry on successful industrial operations who do not possess the requisite capital, and many people, on the other hand, who have capital but do not wish to engage in industry. Facilities for borrowing and lending are needed to bring these two classes together for their mutual profit and that of the community. This need might equally well be illustrated by the case of a really sound business man who has temporarily met with misfortune, or by that of a young man capable of profiting by an education but lacking the funds necessary for its acquisition, or by many other situations which will readily occur to the student upon reflection.

Let us now inquire how a medium of exchange satisfies these wants. Our assumed case of the farmer and the shoemaker will assist us. It will be remembered that these two persons found difficulty in exchanging

their products on account of the wide difference in value between the farmer's ox and a pair of shoes. If, in the community to which these two traders belonged, there had been some one durable commodity which was an object of universal desire and consequently daily bought and sold and sure to be in general demand in the future, the way out of their difficulty would have been easy. Even though he might not have wanted it for his own consumption, the farmer would have been quite willing to accept this commodity in payment for the balance due him from the shoemaker, simply because he would have been able to trade it at any time for anything he might chance to want. The shoemaker, likewise, would not have been seriously inconvenienced by the surplus beef, provided he had been able to sell it to his neighbours for this highly exchangeable commodity. By way of illustration let us suppose that gold is a commodity well known and highly valued by every member of the community and considered so very precious that no one doubts the continuance of its value and high estimation through future generations. Being very durable and possessing great value in small bulk, it can be easily kept for any length of time, and, on account of the belief in the continuance of its value, every one feels safe in keeping it by him, and is confident that at any time in the future he can dispose of it for whatever he may desire or need. Being also readily divisible, it is easy to arrange for equivalents of almost any value. Under these circumstances, then, the farmer would have been quite willing to sell his ox for the pair of shoes and the balance in gold, and the shoemaker would have been willing to sell to his neighbours in exchange for gold the beef which he did not want, neither one perhaps intending to consume the gold itself, but being confident of his ability to exchange it at any time for

whatever he might chance to desire. Since other traders under similar circumstances would follow the example of the farmer and the shoemaker, all the members of the community would speedily acquire the habit of taking gold in exchange for their produce, even when they did not need it for consumption, because they could exchange it for whatever they might chance to want at any time more easily than their own product. When any commodity comes to be generally used in this way, it becomes by that fact a medium of exchange.

In our illustration the medium of exchange obviated the difficulty of exchanging two commodities of unequal value, namely, an ox and a pair of shoes. It is evident that it might also be used as a means of accumulating wealth, and also for facilitating borrowing and lending. Being by its very nature a commodity which every person is willing to take at any time in exchange for his goods, no risk would be involved in hoarding it; and people who had succeeded in accumulating it could loan it to others who needed for any purpose to make immediate purchases and lacked the means. The people discussed in our illustration would naturally keep their savings in the form of a hoard of gold. The various commodities of their own production or manufacture being perishable and, perhaps, of uncertain value and consequently incapable of being hoarded, would be exchanged for gold, which could be kept without loss and readily sold for other commodities whenever desired. This hoarded gold could also be loaned to others who need to make immediate purchases but lack the means. In this case, of course, some guarantee that the gold would be returned when wanted would have to be given, but, granted the requisite degree of confidence between man and man, the

gold would make possible the loan with all of its conceivable advantages to both borrower and lender.

3. Credit as a medium of exchange.—The three wants which we have been considering are frequently, and at the present time commonly, satisfied by means of credit in one form or another. The methods of employing this instrumentality as a medium of exchange are various, but only the simplest one can be appropriately explained at this point. Modern commercial processes are conducted by means of a large class of middlemen who intervene between exchangers and relieve them of the greater part of the work involved in trading their products. Among these are shopkeepers who purchase goods, giving the sellers credit on their books for the value of their sales, and sell them again at such times and in such amounts as are desired, debiting buyers with the amount of their purchases. Inasmuch as the buyers and the sellers are frequently the same persons, these merchants are a means of overcoming the difficulties of barter discussed in the preceding section, and their book accounts serve as a medium of exchange.

By way of illustration let us suppose that a primitive community has already acquired a standard of value, and that some very reliable person, in whose integrity and wealth everybody has perfect confidence, establishes a general store, and agrees to buy from the producers everything they have for sale and to sell these same commodities to others at such times and in such quantities as are desired. After the harvest A brings his wheat to the store and receives credit on the books of the storekeeper for the amount agreed upon, this amount being stated in terms of the prevailing standard. Subsequently he purchases various commodities, such as sugar, shoes, coats, meat, etc., and is debited by the storekeeper with the

amounts of his purchases, these amounts being likewise stated in terms of the standard. It is evident that the difficulty involved in exchanging commodities of unequal value is not here met, because it is not necessary that A's account should balance on the occasion of every purchase or sale. It is also evident that A could accumulate his savings in the form of credit on the storekeeper's books, and could borrow by overdrawing his account; that is, by accumulating an uncovered debit balance. In this case the book account serves precisely the same purposes as the gold in our previous illustration. It obviates the difficulty of exchanging commodities of unequal value, and it furnishes a means of making savings and of borrowing and lending.

At first sight there does not seem to be much resemblance between this primitive storekeeper and the great merchants and bankers of the present day. But as a matter of fact they are performing the same functions as he, and by means of very complicated machinery they are using credit of substantially the same sort as he. Their book accounts have become notes and bills of exchange and credit documents of various sorts, but like his they satisfy the three fundamental wants which we have been discussing and which are felt by all traders however primitive or advanced.

4. The relation between the standard of value and the medium of exchange.—Though the functions of the standard of value and the medium of exchange are quite distinct, they may be performed by the same commodity. In a primitive community this is usually the case, because universal exchangeability, a quality essential to both, is rarely possessed by more than one commodity, and that one, therefore, must necessarily serve in both capacities. At the present time, however, the standard of value is

only one element of a very complex medium of exchange, consisting of several commodities and a considerable number and variety of credit instruments. Why this is so will be made clear in the two following chapters.

REFERENCES.

The topics included in this chapter are discussed in most text-books under the head "The Functions of Money," but they are rarely treated in such a way as to show the true relation between money and the fundamental wants of traders, and to emphasize the distinction between the functions of the medium of exchange and that of the standard of value. The following references are typical of the usual method of treating the subject: Mill, *Political Economy*, bk. III, ch. vii; Walker, *Money*, ch. i, and *Money, Trade, and Industry*, chs. i, ii, and iii; Jevons, *Money and the Mechanism of Exchange*, chs. i, ii, and iii; Nicholson, *Money and Monetary Problems*, pt. I, ch. ii. In his article entitled "Geld" in the *Handwörterbuch der Staatswissenschaften*, v. III, Carl Menger treats the subject in an admirable manner. See also Nasse's "Das Geld und Münzwesen" in Schönberg's *Handbuch der politischen Ökonomie*. For a collection of definitions of money see Roscher's *Principles of Political Economy*, Lalor's translation, v. I, bk. II, ch. iii, note 5, and Hildebrand's *Theorie des Geldes*, p. 5.

CHAPTER II.

THE MEDIUM OF EXCHANGE: ITS CHARACTERISTICS AND COMPOSITION, AND THE RELATION BETWEEN ITS CONSTITUENT ELEMENTS.

THE term *universal exchangeability*, which we have just used to describe one of the essentials of a medium of exchange, signifies that quality or combination of qualities which renders a commodity or a credit instrument universally acceptable to people in exchange for their goods or services. In a primitive community this quality or combination of qualities is the capacity to satisfy some fundamental want or wants, such as those for food or clothing or armour, but in a more highly developed state of society certain credit instruments quite incapable of serving as objects of general consumption possess universal exchangeability, and none of the commodities which constitute the medium of exchange enters into the consumption of every person, though all of them are extensively used for a variety of purposes and are highly esteemed by every one. It is, therefore, evident that other considerations besides the capacity to serve as an article of general consumption concur in the selection of the constituent elements of the modern medium of exchange. Among these, accuracy, convenience, and safety in commercial transactions are of prime importance.

1. The importance of an accurate, convenient, and safe currency.—The kind of accuracy which we must here consider is that which concerns the acquisition of the exact equivalent for a commodity sold or the giving of an exact

equivalent of a good bought. Many other kinds of accuracy are of the first importance in business, but this only is significant in the present connection. As compared with former times, commerce is nowadays conducted on a large scale and with small margins. The difference between the buying and the selling price is often so small that a few cents added or subtracted in each transaction mean riches or ruin to a large concern. Hence it is absolutely necessary that very close calculations be made, and that these calculations be realized in the commercial transactions which follow. Inasmuch as practically every trade involves the use of the medium of exchange, this being the universal equivalent given for goods bought and received for goods sold, it is evident that this medium must be of such a character as to render possible the transfer from buyer to seller of the *exact* amount agreed upon. Otherwise the closest and most careful calculations might be of no avail.

The importance of a convenient currency may be appreciated by considering the disadvantages which the use of a medium consisting of a single element such as gold or silver would involve. For large payments the weight of the metal would render transportation difficult, expensive, and slow; and for very small payments, say of a few cents, the amount of metal would be so small that it could not be put into the form of a coin which would be usable, and, if the scales were necessary in every exchange, the rapidity absolutely essential in numberless transactions of everyday life would be impossible. Imagine, for example, the difficulties of travel and of conducting a ticket-office at a busy railway station, if in making small change gold had to be weighed and the infinitesimal amounts preserved and carried about by the passengers. Imagine also the expense and inconvenience

which would be involved in travelling abroad or in taking long trips at home, if one were compelled to carry the amount needed for the entire journey in the form of gold or silver, as would be the case if one of these metals should constitute our only form of currency. Indeed a convenient currency is quite as essential to commerce as are suitable machines for manufacturing, locomotives for railways, or improved facilities for any other business purpose.

By a safe medium is meant one the use of which does not involve loss. It is desirable, therefore, that the value which it is the purpose of the exchangers to transfer should be always and under all circumstances obtainable through the currency by which the exchange is accomplished, and that the various elements of the medium should be so selected and manipulated as to protect merchants against loss under all circumstances. For example, it is highly desirable that a form of currency should exist which can be sent through the mails or by express without subjecting the parties concerned to loss in case of accident to the train or the ship. So far as possible, also, protection against robbers and against the ordinary accidents of commercial intercourse should be secured.

2. Characteristics of a good currency.—In order to meet the demands of modern commerce in the respects which have been indicated, the medium of exchange must possess the following characteristics:—

A. *It must consist of elements representing many grades of value.*—In the United States we need means of payment ranging in value from at least one cent to one hundred thousand dollars, and European nations have found money of even smaller denominations useful. By combination of different elements of the medium it should be

possible to represent the exact value of any and every commodity, and the exact amount of the various payments necessary in commercial transactions, and that, too, with the greatest celerity and without difficult calculations. If a commodity is worth twenty-six dollars and thirty-two cents, for example, we should be able to combine from the constituent elements of the medium exactly twenty-six dollars and thirty-two cents of value. If one should wish to make a payment of a million dollars, it should be possible so to do without burdening oneself with a heavy load of metal or running the risk of making mistakes in counting.

B. *It must be easily and safely transportable in any and all amounts.*—For the purposes of modern commerce currency must frequently be sent by mail or express or freight. It must be carried about in people's pockets and portmanteaus, and stored in banks, treasury vaults, places of business, and the houses of the people. The material or materials of which it is made are, therefore, a matter of great importance. What is suitable for one sort of currency is quite unsuitable for another. A heavy, bulky substance might serve well for small change, but would be an expensive means of making payments in distant places. A commodity possessing great value in small bulk would answer well for large payments and for hoarding, but would be useless for purposes of retail trade and for small purchases generally. Anything possessing high intrinsic value would subject the owner to the danger of loss in case it were sent through the mails or by freight or express. It is, therefore, evident that we need in our currency commodities of different degrees of value as well as instrumentalities which possess little or no intrinsic worth.

C. *It must be easily recognized, durable, and certain in*

its value.—The various denominations of a currency should be recognizable and distinguishable from each other at sight. Otherwise mistakes will be frequent, fraudulent practices easy, and rapidity in making change impossible. Metals used for currency purposes should be put up in the form of coins with their values plainly stamped upon their faces; and the coins of different denominations should be distinguishable by their size, colour, design, or other easily recognizable features. The metals used in the manufacture of coins should also be capable of receiving and holding an easily recognizable stamp.

The fact that the medium of exchange is used as a means of saving and that it must pass from hand to hand year in and year out explains the need for durability. Any commodity which wears out readily would soon lose a portion of its value and become worthless for further service as a medium, to say nothing of the loss, expense, and inconvenience involved in its use. If it were perishable, it would be useless for purposes of hoarding and accumulation.

Absolute certainty of value is also essential to a good medium. If one does not know the exact value of what he is to receive in payment, he will hesitate about selling, or he will raise the price of his commodities or services in a degree sufficient to recoup him for any possible loss from overestimating its value. A medium of uncertain value, therefore, is sure to obstruct trade and to cause spasmodic and speculative fluctuations in prices.

The five characteristic features of a good medium which we have just described enable us to explain the chief component elements of modern currencies. Generally speaking it is true that those elements have survived and become permanent parts of currency systems which

have proven to be best adapted to the ends they serve. Arbitrary power directed by ignorance or self-interest has exerted an unfavourable influence here and there and from time to time, but in the long run the necessities and the convenience of the commercial world have triumphed in the survival of the fittest.

3. The composition of modern currencies. — The currency of every important commercial nation at the present time is composed partly of metallic and partly of paper instruments. The metallic portion consists of coins and may be classified as follows: (*a*) from the standpoint of the materials employed in its manufacture, as gold and silver coins and those of cheaper metals; and (*b*) from the standpoint of the relation between its various elements, as standard and subsidiary coins. The paper portion may be classified as *government* currency and *bank* currency. The currency of the United States, for example, consists: (*a*) of gold coins of the denominations twenty, ten, five, and two-and-one-half dollars; (*b*) of silver coins of the denominations one dollar, fifty, twenty-five, and ten cents; (*c*) of a coin made of nickel of the denomination five cents; and (*d*) of copper coins of the denominations two cents and one cent. Our paper currency consists of several varieties of notes issued by the national government, for example, of greenbacks, Sherman notes, silver certificates, gold certificates, etc.; of notes issued by national banks, and of several other varieties of bank paper, of which checks, drafts, and bills of exchange are the most important. England, Germany, France, Italy, and in fact most of the other nations of the world, likewise have gold, silver, and copper coins and government and bank paper of various sorts. In subsequent chapters we shall describe in detail each of these forms of currency, and, hence, at this point it is

necessary only to explain why we need both metallic and paper money and so many varieties of each.

A. *The utility of several varieties of coins.*—The first characteristic of a good currency described above explains why we need coins of different denominations. Payments of all sizes, both large and small, are necessary and several varieties of coins are needed in order that they may be made accurately and conveniently. If the silver dollar were the only coin we possessed, it would be impossible to pay for purchases of the value of a few cents, and accurate payments of any size which involve fractions of a dollar could not be made. Moreover, in large payments the weight of the silver would be burdensome and expensive, and the counting of it would require time which the existence of money of larger denominations might save.

The need for coins of large and small denominations explains the use of gold, silver, and cheaper metals in their manufacture. Convenience demands that coins of large denominations should be manufactured from some metal the value of which is very high. For this reason, the world over, gold is used for coins of higher denominations than our dollar. In our country, as we have seen, twenty-, ten-, five-, and two-and-one-half-dollar coins are of gold; in England the sovereign and half-sovereign are made from this metal; in Germany the twenty- and ten-mark pieces, and in France the twenty- and ten-franc pieces. On account of its much lower intrinsic value, silver is well suited for coins of denominations ranging from ten cents to one dollar. Accordingly England uses silver for the manufacture of her sixpences, shillings, florins, half-crowns, and crowns; Germany in the manufacture of her five-, two-, and one-mark and her fifty-pfennige pieces, and France in the manufacture of her

five-, two-, and one-franc and fifty-centimes pieces. For coins of lower denominations than ten cents, fifty pfennige, or fifty centimes silver is not well adapted, because the coins are so small as to be extremely inconvenient. Holland has two silver coins of lower denomination than our ten-cent piece, but they are so tiny that they are difficult to handle, easy to lose, and hard to distinguish. Experience has led to the abandonment of such small silver coins in nearly all nations, and to the use instead of copper or bronze for the smallest coins, and of nickel for the coins intermediate between the smallest and those of about the value of our ten-cent piece. The practice of the great nations regarding these smaller coins is not identical except in the one point that they use metals cheaper than silver in their manufacture.

Besides their value several other qualities should be noted in any attempt to give a complete explanation of the selection of gold and silver as the chief monetary metals of the world. Among these the most important are the durability, divisibility, and homogeneity of these metals and their adaptability to the art of coinage. When slightly hardened by the admixture of small quantities of other substances, gold and silver coins will endure the wear and tear of modern commercial usage with but small loss of substance, and are but slightly, if at all, affected by the atmospheric elements which cause other metals to rust, and subject them to chemical changes which in time result in their complete destruction. They are also capable of being refined to such a degree and are so easily divisible that coins exactly alike in weight, fineness, and form can be made from them. In the form of coins they can also receive and retain a stamp which is easily recognizable. As compared with other metals, moreover, the value of gold and silver has been remark-

ably steady throughout long periods of time. In fact, no other metals are known which possess in the same degree of perfection as these the peculiar combination of qualities required in the manufacture of coins.

B. *The utility of paper currency.*—The characteristic feature of paper currency is the fact that it does not contain in its own substance the value expressed by the figures or statements on its face, but simply represents the obligation of some public or private corporation or of some person to pay the amount indicated. The secret of its circulation has already been suggested.* If people have entire confidence in the ability and willingness of the issuing party to pay the obligations on demand, and if they meet a real currency need, they will circulate. The measures necessary to secure and maintain the confidence of the public in this sort of currency will be discussed under the appropriate heads in succeeding chapters. We shall here point out simply its superiority for certain purposes over other forms of currency.

The comparative inexpensiveness of paper currency is obvious. It costs only the value of the paper and the labour of printing. Compared with the expense involved in the mining and assaying of the metal and in the minting and the wear and tear of coins manufactured from such valuable materials as gold and silver, this is significant, to say nothing of the loss involved in withdrawing immense quantities of these valuable metals from ordinary consumption. When considerable sums need to be transported from one part of the country to another or from one country to another, the economy of paper currency is still more apparent. If it were necessary to transport several millions of dollars from Chicago to Lon-

* Chapter I, pp. 12 and 13.

don, the express charges on the necessary amount of gold or silver would be very high, while a draft for the amount can be sent in a letter for five cents.

While not so obvious, the superiority of credit currency, under certain circumstances, in the respects of convenience and safety is important. In the making of large payments it is much more convenient to write a check than to hand to your creditor the requisite amount of gold or silver or even of bank-notes or government notes, and it is more convenient to hand him bank-notes or government notes of large denominations than coin. When one is making a long journey and on this account finds it necessary to carry on his person considerable sums, he appreciates the superior convenience of paper currency. The claim of superior safety cannot be made for all forms of credit paper, but it can be made for checks and drafts and certain forms of notes issued by express companies, post-office departments of governments, etc. The loss of a check or a draft or of certain forms of money orders through theft or other means does not involve the loss of the sum indicated on its face. Being made payable to a definitely specified person, and careful records being kept by the issuing parties, duplicates are obtainable. Moreover, the use of credit currency in its various forms obviates the danger that would otherwise be involved in carrying about large quantities of gold and silver. The police force of every large city would needs be largely increased if the actual transfer of coin of the required value were necessary in every transaction. Every railway and steamship company and every private mercantile establishment would also need to provide itself with heavy safes and a small army of police for purposes of protection. The temptation to robbery thus occa-

sioned would doubtless largely increase crime, and thus diminish the general security of the community.

Certain forms of paper currency also possess the very desirable quality of elasticity; that is, the quantity in circulation automatically adjusts itself to the needs of commerce, increasing when more money is wanted and decreasing when the need that called it into existence has passed away. An element of this sort is essential to a perfect currency because the need for money varies greatly from year to year and in different seasons.

In the United States the needs of different sections of the country are subject to seasonal variations, and the volume needed for the entire nation is larger in times of great commercial activity, and smaller during periods of depression. No one has sufficient foresight to be able to predict the degree of these changes, and only occasionally, as in the case of certain of them which depend upon crop movements, can the dates be even approximately fixed. It is necessary, therefore, that certain forms of currency should, as it were automatically, move from place to place and increase and decrease in quantity. As will appear in later chapters, only certain varieties of paper currency possess this desirable quality. The movements of coin in both the directions indicated are far from automatic, its entrance into and withdrawal from circulation requiring considerable time and the manipulation of the machinery of government.

The superiority of credit currency in the respects mentioned accounts for its extended use in all modern commercial nations, and for its increasing use as commercial operations grow in extent and magnitude. It must not be forgotten, however, that its superiority is confined to certain of the uses of a medium of exchange, and does not extend to all. In retail trade and for the

making of change and for small payments everywhere coins still excel in convenience and safety, and there is no reason to expect that their use will ever cease.

4. Gresham's law. — The concurrent circulation of metallic and paper currency and the use of coins made of different metals involves a difficulty the removal of which only time and long experience has made possible. This difficulty may be illustrated as follows: Suppose that, at the time of the minting of gold and silver coins, the relative value of these metals is 1 to 20; that is, one ounce of gold is exactly equal in value to twenty ounces of silver, and that accordingly twenty times the weight of silver is used in the manufacture of five silver dollars as of gold in the manufacture of a five-dollar gold piece. For example, suppose that 125 grains of gold be put into each of the five-dollar pieces and 500 grains of silver into each of the one-dollar pieces. Suppose that the proportions of the two metals used in the manufacture of all the other coins be precisely the same. Under these circumstances the market value of the metallic content of each and every coin would be exactly expressed by the stamp on its face, and five silver dollars, ten silver half-dollars, and twenty silver quarter-dollars would be equivalent in market value to each other and to a five-dollar gold piece. Let us suppose further that, in order to avoid all possibility of inconvenience or difficulty in the circulation of these coins, a law is passed conferring upon them the so-called *legal-tender* quality; that is, declaring that in the payment of debts and the making of purchases of all kinds five silver dollars, ten silver half-dollars, twenty silver quarter-dollars, and a five-dollar gold piece shall be equivalents. For a time we may suppose that all goes well, everybody giving and receiving indifferently gold and silver coins in the proportions indicated,

the gold coins being naturally used in large payments and the silver in small. Soon, however, the value of one or both of the precious metals changes, so that *on the markets twenty-five ounces* of silver instead of *twenty* are needed to purchase an ounce of gold. What now will happen to the coins which have been declared by law equivalents in the making of purchases and the payment of debts? Will people continue indifferently to give and to receive five-dollar gold pieces and five silver dollars in payments of the amount of five dollars? Certainly not. They will sell the gold coins as metal or hoard them for future use, and make their payments in silver alone. If we suppose that the majority of people are unaware of the change in the value of the metals or through habit or ignorance continue indifferently to pay out the gold and silver which comes into their possession, we may be sure that the money-changers and the bullion-dealers will be sufficiently shrewd and wide awake to speedily drain the currency of all of its gold.

The same difficulty may result from the concurrent circulation of metallic and paper money. Suppose that the government has issued notes in denominations of five, ten, twenty, fifty, etc., dollars, and made them legal-tender at their face value; that is, declared a five-dollar note equivalent to a five-dollar gold piece or to five silver dollars in the payment of debts and in all other kinds of financial transactions, a ten-dollar note to a ten-dollar gold piece or to two five-dollar gold pieces or to ten silver dollars, etc., etc. If the people have perfect confidence in the government's ability and willingness to pay, and it is perfectly easy to procure gold and silver coin with the paper without loss or difficulty of any kind, they will continue to give and to receive the notes and the coins indifferently; but if they should lose confidence in the govern-

ment or should for any reason prefer coin, they would avail themselves, whenever possible, of the advantages of the legal-tender law by paying out their notes and retaining their gold and silver for the purpose of hoarding or in order to sell them as bullion or for any other use in which they could realize their full value. Under these circumstances it is evident that coins would speedily disappear from circulation and the government notes remain in full possession of the field.

The difficulty involved in the disappearance of undervalued coins from circulation has been experienced over and over again in the monetary history of the world and in a variety of forms. Now one class of coins has been removed from circulation and now another, and frequently all kinds of metallic money have disappeared before the advent of depreciated paper. In the early years of the last century our currency consisted exclusively of silver, because gold was undervalued at the mint. Later on, after the discovery of the gold-mines of California and Australia, gold diminished in value very greatly, and our silver speedily disappeared from circulation. During our Civil War and for many years after its close depreciated government notes prevented the use of gold and silver coins for monetary purposes. Sir Thomas Gresham, one of the most famous directors of the English mint, formulated the experiences of his time along this line into a law which has ever since borne his name.* Poor money, he said, always drives good money out of circulation. By poor money he meant money which was not worth its face value, and the process which he described as the driving of the good money out of circulation was simply

* This law was discovered at least two centuries before Gresham's time, being clearly stated in Oresme's "De Origine, Natura, Jura et Mutationibus Monetarum" published in the fourteenth century.

the disappearance of the coins of superior intrinsic value from circulation as money because they could be more profitably used in other ways. This so-called Gresham's law is simply the expression of a universal experience which has as its cause the commercial instinct common to all men and which urges them to make the most of their possessions.

The operation of Gresham's law is always accompanied by inconvenience and loss. In the first place, it renders impossible the realization of the advantages of a complex currency. If the gold disappears from circulation, the community has no coins suitable for the making of large payments. If the silver goes, it becomes difficult or impossible to make small change. If government paper drives all the coin from circulation, the community suffers from a combination of ills, which will be described in Chapter V. In the second place, the operation of Gresham's law interferes seriously with prices.

When people begin to make use of their legal rights by the employment of the depreciated element in the payment of debts, persons of all sorts who have goods for sale and persons who are making loans which are to be paid back in the future will protect themselves against the depreciated currency by raising the prices of their goods to at least the extent of the depreciation and by so adjusting the terms of the loan as to avoid loss. The result, therefore, will be a general rise of prices. If the depreciation be a certain fixed amount which can be readily calculated, as will be the case with a coin whose intrinsic value is less than its face value, the shock to prices may be but a single one and the new level may be as stable as the old. If, however, the depreciation is more or less uncertain and perhaps in part due to speculation, as is liable to be the case with certain forms of credit currency, the

interference with prices is liable to be continuous and the new level to be very unstable. Such conditions are sure to breed speculation of the most dangerous sort, and, if long continued, to seriously shake that confidence between man and man which is essential to the maintenance of the credit system, thus creating conditions favourable to crises and other forms of commercial disaster.

5. Standard and subsidiary coins.—How to prevent the operation of Gresham's law and thus to avoid the evils which it involves has been one of the most difficult problems which governments have had to solve. During the middle ages its solution was sought in vain, and the monetary history of every European country during several centuries exhibits a succession of fruitless attempts to retain in concurrent circulation gold, silver, and copper coins of the various denominations needed for commercial and governmental purposes. Finally, however, the solution was found, and no nation nowadays needs to be troubled by Gresham's law. So far as the concurrent circulation of coins made of different metals is concerned, the operation of this law is avoided by the device of making certain of the coins *subsidiary* to others which are called *standard*. In many countries at the present day the gold coins are the standard ones, and all others are made subsidiary by treating them in the following manner:—

(*a*) By reducing the quantity of the metal in them to such an extent that their intrinsic value is much below their face value;

(*b*) By limiting the quantity of them to the actual needs of the community for coins of these particular denominations;

(*c*) By limiting their legal-tender quality to small sums; and

(*d*) By making them redeemable in the standard coins.

The explanation of the efficacy of these measures is obvious. So long as the silver, nickel, and copper coins are redeemable at their face value in gold coins, no one will hesitate to take them at that valuation, no matter how much below it their actual intrinsic value may be. The lowering of their intrinsic value by diminishing the amount of metal used in their manufacture, therefore, does not prevent their circulation at par, but it does prevent their disappearance from circulation in case of a considerable increase in the market value of the metal of which they are composed. For example, if an ounce of gold is equal in value to twenty ounces of silver, and the five-dollar gold piece weighs 125 grains and the one-dollar silver piece 400 grains, the value of the metal in the silver dollar is worth only eighty cents. So long, however, as the government stands ready to give a five-dollar gold piece for five silver dollars, each silver dollar will continue to circulate at its face value, and the value of silver would needs rise more than twenty-five per cent before the operation of Gresham's law would drive the silver coins out of circulation. The disappearance of the gold coins by the operation of Gresham's law and the impoverishment of the government on account of the demand for the exchange of silver for gold is prevented by the limitation of the quantity of the subsidiary coins minted and by making them legal-tender for small sums only. So long as the quantity of such money in circulation does not exceed the actual need for it for commercial purposes, there will be no disposition to demand its redemption, and so long as its legal-tender quality is limited, no one is obliged to receive it in large quantities, and consequently its general substitution for gold in the currency is rendered difficult, if not impossible. Indeed these four regulations

place the control of the substitution practically in the hands of the government, at the same time giving it the power to prevent the operation of Gresham's law and to protect itself against loss.

The laws passed by the various nations for the regulation of their subsidiary currencies differ considerably in details, but they all embody these principles. Special exceptions are sometimes made, as, for example, in the case of our silver dollars and the five-franc pieces formerly minted by the states of the Latin Union, but such exceptions must not be regarded as in any sense an abandonment of these principles or a demonstration of their uselessness. On the contrary, the unfortunate experiences which have usually followed attempts to make exceptions in the application of these principles have confirmed their validity and demonstrated the danger of their violation.*

6. The concurrent circulation of metallic and paper money. —All forms of paper money are characterized by the possession of the credit feature briefly explained in the first chapter. Each and every one represents and in some way expresses the obligation of some person, corporation, or government to pay the sum indicated on its face. The intrinsic value of these notes is, of course, practically nothing. Why, then, do they circulate side by side with silver and gold coins without displacing them or being displaced by them? Attempts to answer this question have probably given rise to more controversy than any other subject in the range of monetary science, and it is not best in this chapter to enter into a discussion of the various pertinent questions; but it is desirable to call attention at this time to the fact that the principles which

* The reasons for making these exceptions and the unfortunate experiences which have followed them will be treated in the chapters on Bimetallism.

we have discussed in the preceding section may be applied here. For example, if the paper money is made redeemable on demand at its face value in standard coins, it will readily circulate without danger of depreciation. If the quantity issued does not exceed the demand for it for currency purposes, and its legal-tender quality be limited, there will be no danger of its substitution for coin in large quantities or of the disappearance of coin from circulation. Without entering in any way into the discussion of controverted questions, therefore, we may understand at least one method of maintaining in concurrent circulation metallic and paper currency. The application of these principles to the various forms of paper currency issued by governments and banks, and the danger of their violation in this case as well as in that of silver and gold coins, will be made clear in the appropriate place.

REFERENCES.

On Gresham's law see Jevons, ch. viii; Nicholson's *Money and Monetary Problems*, ch. iv, and *Political Economy*, v. II, ch. xiii.

On subsidiary currency see, for a discussion of the principles involved, Nicholson, ch. iv; Mill, bk. III, ch. x; Nasse, ch. vii; and *Report of the Monetary Commission of the Indianapolis Convention*, §§ 42 to 45.

For the regulations of the various States see Norman's *Complete Guide to the World's Twenty-nine Metal Monetary Systems*, Watson's *History of American Coinage*, ch. xxi, and Lejeune's *Monnaies, Poids et Mesures des Principaux Pays du Monde*.

CHAPTER III.

THE STANDARD OF VALUE AND PRICES.

1. The unit of value and prices defined.—In the first chapter the standard of value was defined as that commodity in terms of which the values or ratios of exchange of all other commodities are expressed. It was also shown that these expressions of ratios always take the form of figures which represent multiples and subdivisions of a definite portion of the standard. The portion of the standard which is selected as the basis of measurement is usually given a specific name, such as a dollar, a pound sterling, a franc, a mark, or a lire, and is called the *unit of value*. The quantity thus selected is purely arbitrary, as well as the name given to it.

The technical term which has been universally adopted for the numerical expression of the values of commodities in terms of the standard is *price*. When, for example, we wish to say that the ratio of exchange between wheat and gold is as one bushel of wheat to 23.22 grains of gold, we say that the price of wheat is *one dollar* per bushel, because in the United States we have adopted 23.22 grains of gold as our unit of value, and have named it one dollar. When we wish to express the fact that the ratio of exchange between a pair of shoes and gold is one pair of shoes to 116.10 grains of gold, we simply say that the price of a pair of shoes is five dollars, because 116.10 is five times 23.22, our unit. In England these ratios or prices are expressed in terms of pounds, shillings, and pence, in France in terms of francs and centimes,

and in Germany in terms of marks and pfennige, because these nations have adopted these names for their units of value and subdivisions respectively.

2. The relation between the standard of value and prices.—Remembering that prices are simply the numerical expression of the ratios of exchange between every other commodity and the standard commodity, we may easily explain the immediate causes of their fluctuations. Since the ratio of exchange between two commodities is simply the relative quantities that exchange for each other, it is evident that this ratio will change whenever the worth of either of the commodities changes. If wheat is being exchanged for shoes from time to time, and it becomes for any reason more valuable, it will exchange for a larger number of shoes; if it becomes less valuable, it will exchange for a smaller number. Likewise if shoes become more or less valuable, the ratio of exchange with wheat will change. By parity of reasoning, prices, which are the expression of the ratio of exchange between the standard and commodities, may change from any one of the following four causes or from various combinations of these: (*a*) from a rise in the value of the commodities the prices of which are in question; (*b*) from a fall in the value of these commodities; (*c*) from a rise in the value of the standard commodity; and (*d*) from a fall in the value of the standard commodity. The first and fourth of these causes will result in a rise of prices, and the second and third in a fall.

By way of illustration of these propositions, let us consider the possible causes of changes in the price of wheat. Remembering that gold is our standard and that Congress has decreed that 23.22 grains of gold shall be called a dollar, by definition we know that when wheat is a dollar a bushel, 23.22 grains of gold are exchanging

on the markets for one bushel of wheat. If subsequently, for any reason, the value of wheat should increase, that is, if people should desire it more intensely, or some new use for it should be discovered, or the supply of wheat should become short, the value of gold remaining unchanged, the price of wheat would certainly rise, since it would require more than 23.22 grains of gold to purchase a bushel. If wheat had just doubled in value, it would require 46.44 grains to make the purchase; that is to say, wheat would sell for two dollars a bushel. If, on the other hand, the value of wheat should diminish one-half, a bushel could be purchased with one-half the former amount of gold, and the price of wheat would be one-half of a dollar per bushel. Reversing the terms of our illustration, and assuming that the value of wheat remains unchanged, and that of gold rises and falls, we obtain corresponding results. When the value of gold rises, less gold will be required for the purchase of a bushel of wheat, and its price will fall; when the value of gold falls, more will be required for the purchase of a bushel of wheat, and its price will rise. If both wheat and gold were changing in value at the same time, it is evident that the result would be either rising or falling or stationary prices, according to the direction and amount of the changes. If gold should fall in value in exactly the same degree and at the same time that wheat was falling, prices would remain stationary. If, on the other hand, the changes were in opposite directions, the gold falling and the wheat rising, the rise in the price of wheat would be very great. Conversely, if gold were rising in value and wheat falling, the price of wheat would fall very rapidly.

3. Primary and secondary standards.—In order to avoid confusion in the interpretation of prices it is neces-

sary to distinguish a special class of value standards to which the adjective *secondary* may be applied. The commodity standards, the function of which we have described in the preceding pages, may be called *primary*. Secondary standards are based upon the primary in the sense that their value is derived from them and that their independent existence is impossible. In other words, a community may have a primary standard of value without a secondary, but cannot have a secondary standard without a primary.

Secondary standards usually consist of government notes which have been made *legal-tender*, that is, of promises to pay, put into circulation by the government, and by law made receivable for all debts public and private. The effect of a legal-tender law of this sort is to compel creditors to accept government notes for the sums due them and to permit debtors to pay their debts by presenting or *tendering* these notes. In a succeeding chapter we shall explain how such notes may take the place of all other forms of money, and why people, though compelled to accept them for payments due, ordinarily discount them, that is, receive them at less than their face value. It is discounted or depreciated notes of this sort that become secondary standards and in the following manner:—

Suppose our government were to issue notes of the various denominations, one dollar, two dollars, five dollars, ten dollars, fifty cents, twenty-five cents, ten cents, etc., and by law compel us to receive them in all payments, the notes containing upon their face a printed statement to the effect that the government promises at some not specified future date to pay to the bearer the sum indicated. Suppose further that, fearing lest the government might not keep its promise or that it would be slow

in paying, or for some other reason, we should be unwilling to accept a dollar note for more than fifty cents, a two-dollar note for more than one dollar, a ten-dollar note for more than five dollars, etc. The result would be that prices would be doubled and these notes would become a secondary standard. A farmer whose wheat is worth one dollar per bushel would now demand a two-dollar note for it, and, if these notes constituted the only available money, he would henceforth quote his wheat at two dollars per bushel instead of one, knowing that he must receive these depreciated government notes in payment. When everybody had acquired the habit of quoting prices in terms of this depreciated paper, all prices would have doubled and the government notes would have acquired the quality of a secondary standard of value.

It should never be forgotten, however, that under such circumstances the use of the primary standard would not be discontinued. It would needs be constantly used to test the depreciation of the notes and in foreign exchanges. The expressions one dollar, five dollars, fifty cents, etc., printed on the notes would mean nothing until they were referred to the unit of value defined by statute as a certain amount of the primary standard. The community would have two sets of prices, one quoted in terms of the primary and the other in terms of the secondary standard, the difference between the two measuring the extent of the depreciation of the notes.

When a community possesses a secondary standard of value it is subject to fluctuations in prices from three instead of two sets of causes, namely, from changes in the value of commodities, from changes in the value of the primary standard, and from changes in the degree of depreciation of the secondary standard. In such a

community, even though commodities and gold were relatively stable in value, great fluctuations in prices might result from changes in the degree of depreciation of the government notes.

4. Characteristic features of standards of value.—The danger of confusing primary and secondary standards renders desirable a more detailed account of the characteristics of the former. Among these the most important are the following:—

A. *A high degree of utility for purposes of ordinary consumption.*—No commodity can serve as a primary standard of value which is not highly prized for purposes of ordinary consumption, so highly prized indeed that it is or may easily become an object of universal desire. The truth of this proposition rests upon two facts which become self-evident the moment one grasps the real nature of a standard. The first is that people can get into the habit of quoting the values of their commodities in terms of some one commodity only after they have learned the ratios of exchange between said commodities and the one in question by means of frequent exchanges. It is manifestly impossible to express a ratio which you do not know, and there is no conceivable way of knowing a ratio of exchange except by actually making exchanges and observing the terms in which they are made. It is equally evident that such knowledge could become *common* only after practically everybody had frequently traded his products for the one in question. For convenience of expression we shall hereafter speak of a commodity for which people generally are anxious to trade their products and services as one *possessed of a high degree of exchangeability.*

The second fact upon which the truth of the proposition we are defending rests is that such general and fre-

quent trading of all sorts of goods for some one commodity as is necessary to fit it for the work of a standard implies the possession by said commodity of very great utility for purposes of ordinary consumption. That every person in a community should frequently trade his products or services for a commodity which to him is useless it is impossible to conceive. It is necesary, however, to emphasize this truth at the very beginning of our study, because the failure to grasp it is responsible for a great deal of fallacious reasoning and a number of monetary heresies.

B. *Serviceability as a medium of exchange.*—In primitive communities the same commodity serves both as a standard of value and a medium of exchange, for the reason that a high degree of exchangeability fits it for both services. With the growth of commerce, however, the credit method of conducting exchanges, explained in the first chapter, has come into extensive use, and nowadays the medium of exchange everywhere consists of credit instruments and a number of different commodities besides that which serves as the standard. Nevertheless it is still important that the standard should constitute an element of the medium of exchange. This becomes evident when we recall the regulations necessary to maintain in concurrent circulation several varieties of coins and paper currency. As explained in the preceding chapter, subsidiary coins and paper currency must be redeemable directly or indirectly in standard coins, and it is best that these latter coins should be made from the commodity which serves as the standard of value. The statements on the faces of the coins and notes in circulation always refer to the standard commodity. A five-dollar government note or bank-note is a promise to pay a specified amount of this commodity; and while

the statements on the faces of the coins do not formally constitute promises to pay, the figures always refer to specific amounts of this same commodity; and if they circulate at the value indicated by these figures, it is because they are either directly exchangeable for that specified amount of the standard commodity or redeemable in an amount of some other commodity exactly equivalent to this in value. The difficulty connected with the redemption of the various elements of the medium in other commodities than the standard is the fact that the quantity of such commodities receivable in payment for a ten-dollar note or a dollar or fifty-cent coin would vary with the price of the commodities. Suppose, for example, that all elements of the medium were made redeemable in silver, gold being the standard of value. When silver was worth a dollar an ounce it would take ten ounces to pay a ten-dollar note, and when its price was fifty cents an ounce it would take twenty ounces to redeem the same note. It would always be necessary to determine the price of silver in gold before the payment of the note or the redemption of the coins could be accomplished.*

When all forms of currency are made redeemable in the standard commodity, on the other hand, the quantity payable for a ten-dollar note is unchangeable, since ten dollars mean ten times the unit of value called the dollar, and this unit is defined by law to be a certain number of grains of gold. If, then, the standard com-

* The student must not allow himself to be deceived by indirect systems of redemption. We may make notes redeemable in silver dollars at their face value without reference to their intrinsic value, and no difficulty will be experienced provided the silver dollars are themselves directly or indirectly redeemable in gold. Under such a system the notes are really redeemable in gold, but by an indirect or roundabout process.

modity be put up in coins of convenient sizes and denominations, it constitutes as nearly perfect a material for redemption as it is possible to obtain. It follows that a good standard of value must be a commodity which possesses the qualities needed in the manufacture of coins, such as durability, divisibility, homogeneity, malleability, etc.

C. *Capacity to be easily and cheaply hoarded and transported.*—The extensive use of the standard commodity as material for redemption renders important its capacity to be easily and cheaply hoarded and transported. The commodity used for the payment of notes and the redemption of coins must be frequently transported between different countries and different parts of the same country, and the question of expense of transportation thus becomes an important matter. If the redemption material is bulky and of low value, the expense of transportation must be high; if it is very valuable, that is, possessed of a good deal of value in small bulk, these expenses are much lower, indeed may be relatively insignificant. In subsequent chapters we shall explain the necessity of paying balances between banks in the same and different countries in the standard commodity, and consequently the need many banks, and sometimes the national treasury, feel for keeping large amounts of this commodity on hand in their vaults. A bulky commodity is much more expensive to store than one of high value. It thus becomes evident that of two commodities otherwise equally well fitted to serve as a standard of value, the more valuable one has the advantage in the particulars just described. Great financial institutions which are obliged to handle large quantities of the standard commodity possess great influence in the determination of what that commodity shall be, and, for

the reasons mentioned, among others, are quite certain to favour the more valuable commodity.

5. The history of standards and units of value.—The number and variety of commodities which at various times have served as standards are great. Various kinds of grain, rice, cattle, salt, tobacco, skins of animals, cacao, and various metals, of which the most important are lead, iron, copper, silver, and gold, may be mentioned. Of these, gold has best stood the various tests, and is now the standard in all the great commercial nations. Since commerce has been playing an important rôle in the affairs of nations, silver has been its only competitor. These two metals are better fitted for the work of a standard in all the respects we have mentioned than any of the other commodities. On account of their durability, divisibility, adaptability to the coiner's art, and high value, they are preeminently fitted for service as a medium of exchange, and their great beauty and consequent adaptability to purposes of ornamentation made them objects of universal desire very early in the history of civilization. Custom and law have also long favoured them. The victory of gold over silver in comparatively recent times is due chiefly to its superior value and its consequent extended use in international exchanges and in the payment of balances between banks. Legislation has also favoured it, but largely for this reason. It is equally as good as silver in all other respects, and much better in this very important one.

Of secondary standards history presents us with numerous examples. During the years 1790–1796 France had such a standard in the depreciated government notes which displaced all other forms of money and which were issued by the Revolutionary governments as a means of meeting the extraordinary expenses of the

time. During the years 1793–1821 the notes of the Bank of England, not being redeemable on demand in coin, depreciated and became a secondary standard. So comparatively slight was the depreciation of the notes during the greater part of the period, and so gradual their introduction as a secondary standard, that many people believed them to constitute the primary standard, and a number of theories in support of this contention gained currency. During our Revolutionary and Civil wars depreciated government notes came into general circulation as money and served as secondary standards. Italy, Greece, and Spain have such standards at the present time. In all of these instances silver or gold continued as the primary standard, and prices were commonly quoted in these metals as well as in the depreciated paper.

The history of units of value is too complicated and in many cases too obscure to warrant any extended account here. The English pound sterling has probably had the longest continuous history of any of the units of value employed by modern nations. It dates back at least to the later Saxon period, and probably still farther. The name *pound*, however, has been the only really permanent element. For many centuries it consisted of silver, but the amounts which it represented were repeatedly diminished until from a pound's weight it ultimately fell to a few ounces. It was not represented in the form of a coin until modern times. In 1816 it was changed to gold and has remained unaltered to the present day. In France the same system of reckoning as in England, with the French names livre, sou, and denier instead of pound, shilling, and penny, was employed until 1795, when the modern franc was adopted as the unit. As in England, the amounts of metal represented by these names constantly diminished, and they were even less

frequently represented in coins. In Germany the same system with the names pfund, schilling, and pfennig was originally employed, but a number of independent and widely different systems were developed in the free cities and independent principalities of the Middle Ages, and it was not until 1873 that the mark, consisting of .398247 of a gramme of gold, became the unit of the whole German Empire. In the United States the dollar has been the name of the unit since colonial times. Up to the establishment of our own coinage system it meant the Spanish milled dollar, but the act of 1792 defined it in terms both of silver and of gold, the ratio between the two being reckoned as 15 to 1. Its content in pure gold at that time was fixed at $24\frac{3}{4}$ grains, but in 1834 it was diminished to 23.22 grains, and has remained unchanged since that date.

It is by no means necessary that the unit should be represented in a coin, although it is desirable, as we have shown, that some coins should be made from the standard commodity. For example, though gold is the standard of value in this country and our unit, the dollar, is defined in the statutes as 23.22 grains of pure gold, we do not coin a gold dollar as its representative for the reason that it would be too small for convenient use. Our dollar coin is, therefore, made of silver. The same is true of the present French and German units. While the franc and the mark are both defined as a certain number of grains of gold, the coins designated by these names are, for convenience' sake, made of silver. The English pound sterling, being a very large unit, is represented in a gold coin called the sovereign, which is of convenient weight and size for purposes of general circulation.

6. The importance of stability of value in the standard.—The vital part which the standard of value plays

in the determination of prices suggests the importance of stability of value in the commodity which is to perform this function. Fluctuations in prices ought, if possible, to correspond exactly with fluctuations in the value of commodities. If we could be perfectly sure that every change in the price of a commodity represents and exactly measures a change in the relation between its demand and supply, producers would be able to determine with a considerable degree of accuracy the results of prospective increases or decreases in the supply of their products, and would thus secure a sound basis for the management of their concerns. Under these circumstances, too, political economists and sociologists would be able accurately to translate price statistics into vital changes in our economic life, and thus to trace causes to their effects with a certainty and a degree of accuracy now unknown. To the extent, however, that changes in prices are due to fluctuations in the value of the standard, an element of uncertainty is introduced into all calculations based on prices. Without a special investigation, always difficult, sometimes impossible, and never accurate, one does not know whether a given change in prices is due to a cause operating upon the commodities whose prices are under consideration, or upon gold. If a manufacturer, for example, on account of a rise in the price of his product, which in reality has been caused by a fall in the value of gold, concludes that the demand for his product has greatly increased, and, on the basis of a calculation founded on this conclusion, proceeds to enlarge his factory and increase his output, he is quite sure to suffer loss and possibly bankruptcy. The increased supply of goods which he throws upon the market as a result of his mistake would really not be needed and he would be obliged to sell them at a sacrifice. If his loss should chance to

be great enough to cause bankruptcy, and if his concern were a very large one, and connected in a business way with banks and other large enterprises, his fall might carry others down with him in a constantly widening circle, and a great commercial crisis be the result.

Uncertainty in business affairs of the kind we have been describing can only be completely removed by a standard whose value never changes; that is, by one whose value is absolutely stable. The proof of this is the fact previously stated, that outside of changes in the values of the commodities themselves, the only cause of price fluctuations is a change in the value of the standard.

A second reason for desiring stability of value in the standard commodity is the fact that debts are nearly always measured and expressed in its terms. In this country promissory notes, bonds, stocks, and all contracts calling for payments by one party to another at some future date are drawn in terms of dollars and cents. Each of these documents contains the promise of some individual or corporation to pay some other individual or corporation a specified number of dollars at some period in the future. It is very evident that if these dollars change in value before the date of maturity of the document, the essential character of the contract is changed. If they rise in value, debtors must pay more; if they fall, less. The effect upon creditors, of course, is directly the reverse. For example, a farmer, whose land is mortgaged, must pay to his creditor more value than he intended if the value of the standard rises, and less if it falls. If the amount of the mortgage is $5000, and the value of the standard doubles before the mortgage matures, he will be obliged to pay double the amount of value he intended or an amount of produce which would have been worth $10,000 at the time the

mortgage was made; if the value of the standard diminishes one-half, the mortgagee will receive no more than the equivalent of $2500 at the time the mortgage was made. The mass of indebtedness at the present time is so enormous that a comparatively slight change in the value of gold transfers millions from the pockets of debtors into those of creditors or vice versa. It sometimes happens that the people of an entire section of the country are debtors to a much greater extent than creditors or vice versa, and hence that a change in the value of the standard seriously interferes with the prosperity of the entire community or unjustly enables one region to draw tribute from another. The interests of an entire nation may be dominantly on the side of the creditor class or the debtor class, and international relations thus seriously affected by changes in the value of the standard commodity. The only way in which justice in money matters between man and man, section and section, and nation and nation can be attained, therefore, is by means of a standard which is absolutely stable.

7. Difficulty of securing a stable standard of value.—However desirable a stable standard of value may be, its attainment is very difficult. Not only does no commodity exist the value of which is absolutely stable, but other necessary qualifications limit the choice. We may not select a commodity for a standard simply because its value is stable in a high degree. It must possess the other qualifications mentioned as well. Fortunately, however, these other qualifications contribute towards stability of value. Other things being equal, a commodity which is an object of universal desire, and consequently widely and generally used, is less liable to fluctuations in value than one which satisfies the wants of only a few people. The use of a commodity as a

medium of exchange also is liable to steady its value, since it is possible to substitute other things for it if its value tends upwards, and to substitute it for other things if its value tends downwards. The quantity of the commodity thus used acts as a sort of reserve fund which is used from time to time to steady the market. It seems probable, therefore, that the commodity which has survived the various tests of actual experience, and is now the standard of value of the commercial world, is as stable in value as any single commodity which could be selected. That it comes far short of being an ideal standard, however, will be made evident in succeeding chapters.

8. The interpretation of prices.—The facts which have been presented in the present chapter should help us to appreciate the difficulty involved in the interpretation of present prices and of price statistics. The market price of any commodity is certain to be the result of at least two sets of circumstances, namely, those which determine the demand and supply of the commodity, and those which determine the demand and supply of gold. In a country which possesses a secondary standard a third set of circumstances enters in, namely, those which determine the depreciation of the paper currency. Suppose, for example, that we are asked to interpret a change which took place in the market price of wheat in the United States between the years 1863 and 1865, the price in the former year, for example, being quoted at $1.10 per bushel and in the latter year at $2.50 per bushel. If we desire to know what caused the great rise in the price of this commodity, we are obliged to investigate, in the first place, the demand and supply of wheat during the period, in the second place, the demand and supply of gold, and in the third place, the

depreciation of the government notes which constituted the currency of the period. The change of price may have been due entirely to any one of these sets of causes, but it is more probable that it was due to the operation of all the causes combined. An investigation of this kind is necessarily very difficult. It is not easy to determine at any particular time precisely what is the demand or the supply of a commodity such as wheat. It is still more difficult to determine and accurately measure at any particular time the demand and supply of gold. The depreciation of the notes is also difficult to determine. At the best, in such a case, it is usually possible only to establish a certain probability in favour of one explanation or another, but it is rarely possible to obtain absolute certainty.

The interpretation of certain price statistics presents even greater difficulties. The statistical tables which are usually found in public documents, and upon which interpretations of price changes are based, contain averages of the prices of the commodities in question over a certain period of time and on a particular market. For example, the *London Economist* publishes annually a statement of the average prices on the London market of twenty-two commodities, and compares the average each year with that of a number of preceding years. At the same time it presents also an average of the prices of the twenty-two commodities, and much use has been made of these statistics in the discussion of monetary questions. It is evident from the facts presented in this chapter that the interpretation of the meaning of the average price of a commodity for a certain period of time is even more difficult than that of a specific quotation for a particular moment. Besides the various considerations mentioned in the preceding paragraph,

we have now to struggle with the confusion of averaging a number of such quotations. In the average one cause may offset another, and the meaning of the result can only be obtained by unravelling all of these changes. Suppose, for example, that we average the daily price quotations of wheat for a particular year. One day the price is high as compared with the preceding, another day it is low. The difference is now great, now small. These specific fluctuations, as we have seen, are due to various causes, now affecting the demand and supply of the wheat, now the demand and supply of gold. It is difficult, as we have seen, to measure and unravel these various causes in the case of a specific quotation. How much more difficult is it to solve the problem when we have combined three hundred and sixty-five of these quotations in a single average ! If it is excessively difficult to interpret the average price of the individual commodity, how nearly impossible it must be to correctly interpret an average of the prices of a number of commodities.

The purpose of statistics of average prices is usually to indicate changes in the purchasing power of the unit of value. The average of the daily quotations of wheat for a year gives us an idea of how much wheat on the average during the year in question a dollar would buy, and when we combine the prices of twenty-two commodities for a year we have a result which indicates to us the average amount of those twenty-two commodities which a dollar would command during the year. A knowledge of the purchasing power of the unit is useful for many purposes, but it renders little, if any, assistance in the determination of changes in the actual value of commodities or in the actual value of gold. If we wish to determine whether the ratio between the demand

and supply of gold or of any other commodity has changed during a series of years, only a minute and careful investigation into the various circumstances which have entered into the determination of said demand and supply will suffice.

REFERENCES.

On explanations of changes in prices see the references at the end of the next chapter. The nature and history of standards of value are treated in Jevons, ch. iv; section V of Menger's article "Geld" in the *Handöwrterbuch der Staatswissenschaften* and in his *Grundsätze der Volkswirthschaftslehre*, ch. viii. On the importance of stability of value in the standard commodity see Walker's *Money, Trade, and Industry*, ch. iii, and *Money*, ch. i; Nicholson, pt. I, ch. ii, §§ 4, 5, and 6; Ross's The Standard of Deferred Payments, *Annals* for November, 1892. Price statistics and their interpretation are treated in Nicholson, pt. II, ch. vii; Schoenhof's *A History of Money and Prices*, ch. i; Walsh's *The Measurement of General Exchange-Value*, especially chs. v, vi, and xiv; Falkner's introduction to the *Aldrich Report on Retail Prices and Wages* and his *The Theory and Practice of Price Statistics* in the Publications of the American Statistical Association, v. III, pp. 119–140.

CHAPTER IV.

THE QUANTITY THEORY OF PRICES.

BEFORE proceeding to the next topic in logical sequence, it is necessary to examine a theory which has played an important rôle in the history of monetary science, and which the student will often meet in the books to which reference is made at the ends of our chapters. It is a theory which furnishes an explanation of the relation between the standard of value and prices quite different from that presented in the last chapter.

1. **Statement of the theory.** — The essence of this theory is that the quantity of money in circulation furnishes the key to the explanation of prices and especially to that of the value of the monetary unit or standard. The explanation of prices given by its advocates may be illustrated as follows:—

Suppose that one thousand exchanges are to be made to-day, and that there are in existence precisely one thousand pieces of money. Under these circumstances there will be one piece of money for each commodity, and if we name this a dollar, the price of each commodity will be one dollar, and the price of the thousand commodities precisely one thousand dollars. If from one thousand the number of pieces of money be increased to two thousand, there will be two pieces of money for each commodity, and accordingly the price of each will be two dollars, and of the entire thousand, two thousand dollars. If the number of pieces of money were five

hundred instead of one thousand, directly the opposite result would follow. One piece of money would then have to be exchanged for two commodities, or one-half a piece for each one, and prices would fall for each commodity to one-half a dollar, and for the entire number to five hundred dollars. The general principle, therefore, is that, other things remaining the same, increasing the quantity of money raises prices, and decreasing the quantity causes them to fall; also that the value or purchasing power of the monetary unit is a function of the quantity of money in circulation, and is affected by the market value of the material of which it is made only to the extent that such value may exert an indirect influence upon the quantity of money in circulation. Indeed, it is claimed by the advocates of this theory that an object entirely without value may become a community's primary standard, and they refer to the circulation of inconvertible government notes as an instance in point.

Of equal importance with the quantity of money in the explanation of prices these theorists place the quantity of commodities to be exchanged and the rapidity of the circulation of money on the one hand and of commodities on the other. In the above illustration, for example, if the number of pieces of money be assumed to remain fixed at one thousand, and the number of commodities to be increased from one to two thousand, the price of each commodity would fall to half a dollar. On the other hand, if the number of commodities were halved, the price of each would be doubled. Likewise, if we assume that each piece of money changes hands twice as often as formerly, the effect upon prices would be the same as doubling the quantity; and, if each commodity were exchanged twice as often as formerly, the

amount of money and the rapidity of its circulation remaining unchanged, the result would be the same as doubling the quantity.

This theory is usually stated in such a way as to conform to the requirements of the doctrine of demand and supply, of which it is supposed to be a special case. It is said, accordingly, that the demand for money is a function of the number of commodities to be exchanged in a given time and the rapidity of their circulation, and the supply of money a function of the number of pieces and the rapidity of their circulation, and that, in the case of the money unit as in all others, increasing the demand or diminishing the supply raises the price, and diminishing the demand or increasing the supply causes the price to fall. By the price of the money unit is meant, of course, its purchasing power.

The great age * of this theory, its general acceptance by political economists, and its simplicity and great utility in the solution of certain problems have given it in the popular belief the character of an axiom, and to question its validity stamps one as a heretic and in some quarters throws suspicion upon his mental processes. It is nevertheless true that it will not bear analysis and the tests of logic and facts, and, since it has been a fruitful source of misleading monetary theories, and has been again and again employed in support of questionable financial practices, a presentation of the fallacies it contains is justified in a book of this kind.

2. Its relation to the doctrine of demand and supply.— It should be noted in the first place that the attempt to use the doctrine of demand and supply in support of this theory is a failure. This doctrine is simply a method

* It dates back at least to the sixteenth century.

of describing the process through which the value-determining forces work. It is a short way of saying that when some people want to buy more goods at a certain price than other people are willing to sell at that price, some of the prospective buyers will bid higher, some will stop bidding, new sellers will very likely enter the market, old ones will perhaps offer more goods for sale, etc., etc., and that this process of "higgling" will continue until a certain quantity of goods passes from the hands of certain sellers to those of certain buyers at some price. At what price, this doctrine does not and cannot determine. The so-called equalization of demand and supply may be accomplished at many different prices. To determine at about what price in the long run demand and supply will be adjusted to each other, we are obliged to resort to the principle of cost of production, and ultimately to that of marginal utility. The numerous forces comprehended under these terms work in accordance with the so-called law of demand and supply. An appeal to this law, therefore, cannot settle a dispute regarding the true source of the value of the money unit.

A further difficulty with the application of the doctrine of demand and supply to the problem in hand is the fact that the demand for money, or the amount of money needed, obviously depends in part upon prices. If six commodities, for example, worth a dollar apiece, are exchanged once each simultaneously, six dollar coins will be required to do the work. If they are worth five dollars each, under the same circumstances, thirty dollar coins, or their equivalent, will be required. We thus meet the same problem in another form. If we would explain the demand for money, we must explain prices, and the quantity theorists are thus compelled to reason in a circle, using the doctrine of demand

and supply in support of the quantity theory, and the quantity theory in explanation of the doctrine of demand and supply.

It should be observed further that the introduction of the conception *rapidity of circulation* into the explanation of the demand and the supply of money renders impossible the application of the doctrine to any actual situation. How is one to compare quantity of commodities, together with the rapidity of their circulation, with the number of pieces of money, together with the rapidity of their circulation? What is really meant, when these expressions are used, is that we should compare the aggregate prices of the commodities to be simultaneously exchanged with the number of money units available for effecting these exchanges, these units, of course, existing in the form of coins and paper of various denominations. In any actual case, however, it is impossible statistically to determine these aggregates, and the quantity theorists are forced to resort to vague general statements of probabilities and unproved and unprovable claims regarding the actual state of the facts.

3. The chief fallacy of the theory.—The chief fallacy of the quantity theorists, however, consists in the fact that they entirely overlook the necessity for a commodity standard. For example, in his book on *Money and Monetary Problems*, Mr. Nicholson assumes a group of exchangers who begin operations by agreeing to use as their medium of exchange dodo bones, which he describes as the most useless things he can think of, and proceeds to explain how prices would rise and fall with the increase and decrease in the number of these bones. He completely overlooks the fact that, before the first dodo bone could have been used for monetary purposes,

the ratios of exchange between the various commodities must have been established, and expressed by some commodity standard the value of which might then be assigned to the single bone. Suppose, for example, that sugar, wheat, wood, and stoves are the commodities to be exchanged. Before dodo bones or any other medium could be used, it would be necessary to determine at what rates these goods will exchange. If it be decided that the value of a bushel of wheat is related to that of a unit of each of these commodities in the proportions 1 to 10, 1 to 50, and 1 to 100, then wheat is the real standard of value, and it would be necessary to agree to assign to the dodo bone for the purposes of trade some fraction or multiple of the value of the standard. If the number of bones were small, it might be necessary to call a single one worth a bushel of wheat; if it were large, it might be possible to assign to it only the value of a half-bushel or a peck, but some value, well understood and capable of measurement and identification by every member of the community, would needs be assigned to the dodo bone before any one could use it. What could the producer of wheat do with a basketful of bones except assign to each one the value of the wheat which he gave for it, and what could the wood-cutter do with his supply unless he call each one worth a certain amount of wheat, wood, or some other commodity? It is obvious that whatever was generally used in the community as the means of measuring the value of the dodo bones for purposes of trade would be the real standard and not the dodo bones themselves.

In attempting to use experience with inconvertible government notes as an argument in support of their doctrine the quantity theorists commit the same fallacy. They regard the government's promise to pay as a real

standard of value and proceed to explain changes in prices as a result of fluctuations in the quantity of notes. They fail to see that the figures on the faces of the notes must be given some definite meaning before they can be used for monetary purposes. Thus the government might proclaim that "1" should mean one bushel of wheat, or one ton of hay, or one cord of wood, or one sheep, or one dollar, or some combination of these things, but it could not leave the people in the dark regarding what it did mean. As a matter of fact, the figure "1" on a government note always means the unit of value, whatever at the time and in the nation in question that may be. The figure "2" means twice that unit, etc. In other words, a standard of value suitably denominated must exist in advance, and, in consequence, a level of prices be established at the beginning which is quite independent of the quantity of the notes. Whatever effects changes in that quantity may have, they are purely secondary in character, and, as we shall show in Chapter VI, are due to the depreciation of the notes. That this phenomenon cannot be explained by the quantity theory is evident from our own experience between the years 1861 and 1879. This period was characterized by the circulation of inconvertible government notes, the value of which, as measured by gold, depreciated rapidly until 1864, and then gradually rose * until it reached par in 1879. Statistics show that the price movements of this period followed the depreciation and the appreciation of the notes very closely,† but that the value of the notes did not fluctuate in accordance with their quantity, but in response to a variety of other circumstances, notable

* Many fluctuations up and down occurred during this period, but the general tendency was upwards.

† See Miss Hardy's paper, Chart I.

among which were the fortunes of the war and the action of Congress relative to the resumption of specie payments. Thus between 1863 and 1864 the premium on gold rose 40 per cent, while the volume of the currency increased only 12½ per cent, the chief cause of the depreciation of the notes being the uncertainty of the outcome of the war during that year. This is clearly shown by the fact that on July 1, 1863, when the battle of Gettysburg was raging, the premium on gold rose to 45 per cent, but gradually fell on the 6th to 38 per cent, on the 8th to 33⅜ per cent, and on the 20th to 23¼ per cent, as a result of the victory of the Union armies both in this battle and at Vicksburg and the withdrawal of Lee's army from Northern territory. Between 1875 and 1879 the premium on gold completely disappeared and prices fell about 30 per cent, the reason being not a lack of currency, the volume of which increased during the period about 16 per cent, but the passage of an act in 1875 providing for the resumption of specie payments, and their actual resumption January 1, 1879.

The late President Walker was confused by this same fallacy when, in his text-book and elsewhere, he attempted to defend the proposition that what was needed as the basis for monetary operations was not a standard of values, but simply a *denominator* or *namer* of values. He overlooked the fact that it is impossible to denominate or name what does not exist. In the case of values or prices the thing to be named is the very standard the existence of which President Walker neglected, and the numerical expression of the ratio between its value and that of the various commodities with which it is exchanged.

As soon as it is conceded that the existence of a commodity standard is a necessity, the quantity theory and

the imposing structure of reasoning based upon it falls to the ground, because that concession makes it necessary to explain prices not as the function of the quantity of money and of commodities, combined with the rapidity of their circulation, but as the numerical expression of the ratio of exchange between the value of the standard and that of commodities. That these two methods of explaining prices are not only not identical, as some have claimed, but in many cases contradictory may now be shown.

4. Weakness of the quantity theory as an explanation of certain phenomena of prices.—According to the quantity theory, changes in the volume of the currency are primary causes of changes in prices; while according to the other explanation the causal relation is the reverse, the quantity of money being the result of price changes which in turn are due to modifications in the ratio of exchange between the standard and other commodities. Suppose, for example, that a considerable rise in prices has taken place, and that the statistics of the mints, banks, and other money-producing agencies show that the quantity of money has also increased. The quantity theorists would assert that the rise was the result of the activity of the mints and the banks, while those who believed in the other explanation would search for the causes of the rise of prices in changed conditions in the demand and supply of commodities or of gold or of both, and would explain the increase in the volume of the currency as the necessary result of an increase in the demand for money caused by the rise of prices, and in proof would refer to the axiom of monetary science that when prices are high a larger amount of money is needed to effect the exchange of a given number of commodities than when they are low.

The great practical significance of the difference between these two methods of explaining changes in prices has been repeatedly illustrated in the recent history of the United States. Since the early seventies a considerable fall in the prices of staple commodities has been observed and in various ways measured by statistical processes. Reasoning logically on the basis of the quantity theory, a considerable proportion of our population, led by brilliant orators and skilful casuists in and out of Congress, accordingly concluded that the currency must be very deficient in volume, and that a considerable increase would remedy what they regarded as the great evil of falling prices. Hence the agitation for the free coinage of silver which gave us in turn the Bland and the Sherman acts, and was responsible for the sturdy opposition to the retirement of the greenbacks and Sherman notes after these attempts to inject large masses of depreciated silver into our currency had brought our treasury into serious embarrassment and had helped to bring on one of the severest commercial crises of the century. The plausible fabric of reasoning by which a large proportion of our people was drawn to the support of this agitation was built upon the quantity theory, and could not have endured for a day had it been understood and accepted by all that the volume of the currency was not responsible for the fall of prices, but changed conditions of production and consumption which had effected enormous modifications in the relations between the demand and supply of all the staple commodities, and changed conditions also in the production and use of the precious metals which had radically modified the relations of demand and supply in their cases as well. Many of those who were convinced of the falsity of the conclusions of the advocates of an inflation of the

currency found great difficulty in combating their reasoning, because they too assumed the quantity theory to be an axiom of monetary science.

Many other illustrations of the practical significance of the distinction between these two methods of explaining prices will appear in subsequent chapters. In fact, one's attitude toward such questions as seigniorage, inconvertible government notes, bimetallism, and indeed all questions in which the interpretation of prices is involved, is apt to be very different according as he adopts the one explanation or the other.

The fact, often attested by observation, that there is some relation between the quantity of money and prices cannot be cited in support of the quantity theory, that theory being simply an explanation of the observed relation which happens to be incorrect. That the total volume of the currency is an effect of which prices are one of the causes, is, as we have already remarked, axiomatic. It follows from the very nature of a medium of exchange. As a go-between in every trade, money must reflect prices, and there must be as many units as there are dollars' worth of value exchanged at one time. The number of dollars' worth of value exchanged, however, is determined by the number of times the value of the specific amount of gold or some other commodity, which we have agreed to call a dollar, is contained in the value of the commodities bought and sold upon the markets, and not by the number of pieces of money which may chance to be somewhere stored away or capable of being manufactured. In other words, the money is manufactured for the exchanges, instead of the exchanges being effected for the purpose of using the money.

Certain changes in the currency may be primary

causes of fluctuations in prices, but these are not quantitative changes in its total volume, but changes in its composition. Suppose, by way of illustration, gold being the standard, that silver coins or paper money be substituted in large quantities for gold coins in the circulation. It is highly probable that these coins would eventually be melted down and sold as bullion, in which case, the market supply having been increased, the value of gold would fall, and with it the value of the standard, and prices would rise. For example, there can be little doubt that, if various forms of bank currency were substituted for the English sovereigns and half-sovereigns, the French twenty- and ten-franc pieces, and the German twenty- and ten-mark pieces now in circulation, the value of gold would be affected, and with it prices. Such a substitution, however, would not necessarily involve any change in the total volume of the currencies of those countries. As we shall show in a subsequent chapter, the circulation of inconvertible government notes almost always affects prices, but it does not necessarily affect the total volume of the currency, and, if it does, such an effect follows and does not precede the change in prices. As soon as the notes begin to depreciate, prices begin to rise, but for some time the only change in the currency may be the substitution of these notes for coin and all other forms of undepreciated money. The total volume of the currency may for a time be actually diminished, and an increase will come, if at all, only in later stages of the issue. A considerable substitution of silver for gold in the currencies of the world, as proposed by the bimetallists, would doubtless affect prices, but it would not necessarily affect the total volume of the world's money. The rise of prices would be caused either by a fall in the value of gold due to its increased

supply upon the bullion market, or to the substitution of silver for gold as the standard of value.

The inadequacy of the quantity theory appears in a striking manner when one attempts to explain a series of price fluctuations and currency movements. The following will serve as an illustration: The most reliable statistical investigations show that in the United States between 1861 and 1891 the general level of prices fell about 8.3 per cent, while the volume of the currency during the same period increased nearly 350 per cent. From 1865 to 1890 prices decreased about 57 per cent and the volume of the currency increased about 124 per cent. Only during the four years 1861 to 1865 did the general level of prices and the volume of the currency move in the same direction, the statistics of the former indicating an increase of 115 per cent and those of the latter an increase of 59.4 per cent.* The statistics regarding the volume of the currency in this investigation omitted checks, drafts, and bills of exchange. Had these been included, the increase would have been indicated by a still greater percentage.

The only explanation of these facts which the advocates of the quantity theory are able to give is the claim that the number of exchanges increased to an even greater extent than the volume of the currency. It is impossible either satisfactorily to prove or to disprove this claim by an appeal to statistics, since even approximately accurate numerical statements of the number of exchange transactions in a given day or week or year do not exist. Such statistics bearing upon this question as are available, however,—for example, those pertaining to the increase in the production of various staple products, and to

* See article by Miss Jane Hardy, on "The Quantity of Money and Prices," in *Journal of Political Economy*, March, 1895.

changes in the number of hands through which goods pass on the road from the producer to the consumer,—do not support this claim, but seem rather to reveal a great discrepancy between the facts and the quantity theory. After a careful investigation of the situation for the period 1860–1891, a recent writer * drew the following conclusion:—

"Summing up the evidence which has been presented, it seems (1) that the total increase in the amount of goods to be exchanged varied, so far as estimated, from about twofold in agriculture to a little less than fivefold in manufactures; (2) that the ratio of increase in the volume of transactions was less than this, because the average number of times that the same goods changed hands in passing from producer to consumer decreased, owing to alterations in business methods; (3) that of the means for accomplishing this growing money work, the use of credit instruments, as indicated in bank deposits, increased over eleven times for the country as a whole; while (4) the amount of money in use increased three and one-half times.

"By a different combination these data may be made to yield a more definite result. . . . The increased money work in the United States may be roughly measured by taking the increase of transactions as fivefold, which is certainly an exaggerated estimate. Thus, if there were a hundred units of money work to be performed in 1860, there were five hundred in 1891. At the former date the money † circulation of the country formed 63 per cent of the total medium of exchange; that is, of the bank-deposit currency plus the money. At the latter date it formed

* Mr. Mitchell in *Journal of Political Economy* for March, 1896, p. 164.

† Under the term money, checks, drafts, etc., were *not* included.

33 per cent. Then in 1860 the work performed by money was 63 per cent of 100 units, or 63 units. In 1891 it was 33 per cent of 500 units, or 165 units. This is an increase of not quite two and two-thirds times in the work done by money. But meanwhile the amount of the circulating medium had increased nearly three and one-half times."

Attempts to explain actual price movements thus force the quantity-theorists to overlook some very obvious facts. When a case of a fall of prices accompanied by an increase in the volume of the currency presents itself, their only resort is an attempt to show not only that the number of exchanges has increased, but that it has increased *more rapidly* than the volume of the currency, the whole point of their argument depending upon the accuracy of their claims regarding the *degree* of the increase, and this they are never able to establish by statistics or convincing facts of any kind. The argument itself, as we have seen, is faulty in that it overlooks the very obvious fact that the demand for currency is measured not by the number of commodities to be exchanged at a given time, but by the number of each multiplied by its value or price, and the explanation of this value or price is precisely the point at issue.

5. **Conclusion.**—In conclusion we may summarize our chief objections to the quantity theory under the following heads:—

1. It is based upon the fallacious assumption that a valuable commodity standard is not a necessity in a money economy.

2. It reverses the true relations of cause and effect in the explanation of the connection between the volume of the currency and prices.

3. It is utterly inadequate to the explanation of certain changes in prices which are really caused by

modifications in the currency, and is incapable of explaining the facts in any case.

4. It has been a most fruitful source of false doctrines regarding monetary matters, and is constantly and successfully employed in defence of harmful legislation and as a means of preventing needed monetary reforms.

REFERENCES.

The quantity theory has been expressed in a variety of forms and with varying degrees of accuracy. The best expositions of it are given by Walker, *Political Economy*, §§ 169 to 175, *Money*, chs. iii–viii, and "The Quantity Theory," *Quart. Jour. Econ.*, Ⓥ IX; by Nicholson, *Money and Monetary Problems*, chs. v–vii; and by Mill, *Political Economy*, bk. III, chs. viii and ix. Older and less perfect statements of this theory may be found in John Locke's essay, "Considerations on the Lowering of the Rate of Interest," *Locke's Works*, v. II; and in David Hume's "Essay on Money" in *Essays Moral, Political, and Literary*, v. I, pt. II, essay 3.

For criticisms of the theory see Miss Hardy's "The Quantity of Money and Prices," *Jour. of Pol. Econ.*, March, 1895; Mitchell's "Quantity Theory of the Value of Money," *ibid.*, March, 1896; Willis's "Credit Devices and the Quantity Theory," *ibid.*, June, 1896; Hazell's "Quantity Theory of Money from the Marxist Standpoint," *ibid.*, December, 1898; Scott's "The Quantity Theory," *Annals*, March, 1897; Farrer's *Studies in Currency*, ch. v; White's *Money and Banking*, bk. II, ch. xvii; and Schoenhof's *The History of Money and Prices*.

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CHAPTER V.

METALLIC MONEY.

In Chapter II the currencies of modern times were analyzed into their constituent elements and their general characteristics pointed out. We shall now consider each element separately, beginning with the metallic.

1. The purpose and importance of coinage. — Metals nowadays serve the purposes of money chiefly in the form of coins. Originally doubtless, and occasionally in historic times, they were used in a crude state, the requisite amount being weighed out on the occasion of each exchange or passed from hand to hand in quills or other crude receptacles capable of being used as instruments of measurement. The great advantages of coins, however, led to their universal use in very early times, and at present their manufacture constitutes a business of no small magnitude and of great social significance.

A coin may be defined as a piece of metal or combination of metals bearing a stamp indicative of its weight and fineness, and other devices designed to render counterfeiting difficult, to prevent clipping and sweating, and sometimes to serve educational, artistic, or patriotic purposes. The explanation of their universal use may be found in the fact that, in order to transact business rapidly and accurately, it is absolutely necessary that the money metals should be put up in accurately labelled packages of convenient size and weight, so that any amount, large or small, can be transferred from one person to another or from one place to another without the

waste of time and danger of error which weighing the metals or measuring them in any other way would involve. If gold and silver in its pure state had to be weighed in every transaction, commerce on a large scale, in which rapidity and accuracy are essential and even slight losses in each exchange ruinous, would be impossible. A properly made coin always contains a fixed amount of metal of an invariable degree of fineness, and is so marked that we may know its exact value at sight without resort to the scales or the melting-pot. In making exchanges, therefore, it is only necessary to count and handle them, processes which may be performed very rapidly if their denominations, sizes, and weights are conveniently arranged.

Among the prime considerations in the manufacture of coins are honesty and accuracy. Inasmuch as they must pass from hand to hand throughout the length and breadth of the land and among rich and poor, learned and ignorant, those who understand their nature and those who do not, and must be accepted by everybody at the value represented by the devices placed upon them, absolute confidence in the honesty and accuracy of their manufacture is essential. If the stamp placed upon the coins were false, for example, people would soon discover the fact, and refuse to accept them, or, if compelled by law, protect themselves by refusing to sell their goods and services or by raising their prices. In any case commerce would be seriously obstructed and perhaps entirely destroyed. Inaccuracy in their manufacture is almost equally harmful. Two coins of the same denomination and made from the same metal should be exactly equivalent to each other in weight and fineness. Otherwise the superior coins would soon be culled out and melted up and the currency be constituted exclusively

of the inferior ones. Moreover, the process of exchanging coins for each other simply for purposes of gain interferes with their legitimate use and obstructs commerce.

Owing in part at least to its great importance, the right of coinage has been considered from very early times as the prerogative of the sovereign. Throughout Europe, however, during the Middle Ages it was frequently granted to petty princes and free cities, and in consequence very much abused. In order to make the money received go very much farther than it otherwise would in the payment of debts and the purchase of commodities, debasement was frequently practised; that is, baser and cheaper metals were substituted for a part of the gold and the silver, the old weight and name being retained. Another method employed to accomplish the same end was the reduction of the weight and the size of the coins. These practices were equivalent to a partial repudiation of debts, and, so far as the sovereign possessed and exercised the right of fixing prices, they also amounted to the levy of a tax upon the merchants with whom these sovereigns dealt. In partial justification, or at least explanation, of this abuse, it should be said that the laws of value were unknown to the royal personages of the Middle Ages, and that they generally believed that they possessed both the right and the ability to fix the value of money arbitrarily. The debasement of coins and the diminution of their weight, therefore, were not considered as criminal acts, but as the exercise of a sovereign right and a sovereign power. Not until commerce was developed to such an extent as to make its importance understood by kings and princes did the voice of the merchant class make itself heard in protest against these practices, and correct ideas regarding the nature and functions of money become a part of the com-

mon knowledge of business men and other well-informed people. The process of reform consisted in the gradual withdrawal of the right of coinage from all private persons, and in the development of the strictest integrity in the manufacture of coins on the part of public authorities. At the present time coinage is exclusively a government function, and in no one of the great nations would debasement or other dishonest practices be tolerated. When much worn by usage or in any other way defaced or reduced in weight coins are usually withdrawn from circulation by public authority and reminted. Perfect confidence is thus ensured. Since the laws of every nation contain an accurate description of the material, weight, fineness, and devices of its coins, and the mints execute these laws with perfect integrity, there is no occasion for ignorance, and no danger is involved in accepting metallic money at its face value.

In the preparation and maintenance of a good coinage system several important problems arise, in the solution of which all nations have been guided by substantially the same considerations, though their practices differ considerably in detail. Of these we will discuss the selection of units of value and methods of reckoning, the size, weight, and fineness of coins, and their names and devices.

2. **Units of value and methods of reckoning.**—Two systems of reckoning are at present in use, which we will designate as the English and the decimal. The former is the older of the two, having been employed everywhere in Europe during the Middle Ages, while the latter is the one in common use at the present time. According to the English system the unit is the pound sterling, which is divided into twenty parts called shillings, each of which is further divided into twelve parts called pennies, and

these again into four parts called farthings. A pound is, therefore, equal to twenty shillings or two hundred and forty pence or nine hundred and sixty farthings. The names applied to the unit and its subdivisions have been different in the different countries, and the weight and materials of the coins have changed many times. For example, the names common in Germany were pfund, schilling, and pfennig, and in France livre, sol or sou, and denier. It is probable that the English unit originally was a pound weight of silver, while at the present time it is fixed by law at 113.001 grains of pure gold.

Everywhere except in England this cumbrous system has been abandoned for the decimal, according to which the unit is divided into one hundred parts. In the United States, for example, we call our unit a *dollar*, and the hundredth part of it a *cent;* in Germany the name of the unit is a *mark*, and of the hundredth part a *pfennig*, the same name formerly applied to a two-hundred-and-fortieth part of the old unit. The corresponding names in France are *franc* for the unit and *centime* for the subdivision; in Italy *lire* and *centesimo;* in Austria *krone* and *heller*, formerly *florin* and *kreutzer;* and in Russia *ruble* and *kopeck*. The prevalence of the decimal system is due to its superior convenience. It is much easier to multiply and divide by ten and its multiples than by twelve and twenty.

In the determination of the size and name of its unit of reckoning each nation has been influenced by a variety of considerations, many of which have been peculiar to itself. It is difficult to change a system already in vogue, and consequently historical precedents have been often followed. In the United States the fact that a Spanish coin called a dollar was in general circulation at the time

our monetary system was established and for many years previous to that date, doubtless was the determining factor in the choice of our unit. In Europe the so-called *franc* system is the most widely extended, partly on account of the dominant influence of France among the nations of the Latin race, and partly on account of the inherent merits of the system itself. In consequence of the very different circumstances by which the several nations have been influenced, a large number of units, however, are now in use. From the point of view of size they may be grouped into four main classes. In the first class belongs the English *pound sterling*, which is the largest of all, being equivalent to nearly five of our dollars. To the second class belong the United States and Canadian *dollar*, the Russian *ruble*, and the *peso* of several of the South American States. Of these our dollar may be regarded as typical. To the third class belong the old *florin* of Austria, the *florin* or *gulden* of Holland, and the *krone* of the Scandinavian countries and Denmark. As a type of this class may be taken the Dutch gulden, which is worth about forty cents of our money. In the fourth class belong the units of Germany, France, Spain, Italy, Belgium, Switzerland, and the new unit of Austria-Hungary. Of these the French *franc*, worth about twenty cents of our money, may be taken as a type. It must be remembered that the units of the countries here classed together are not identical. Our dollar and the Russian ruble, for example, differ in value by more than twenty cents, but they have this in common, that, with the exception of the English, they, together with others of the same class, are the largest units now in use. The German mark and the French franc differ in value by about five cents, but they are both relatively small, while the Dutch gulden and the old Austrian florin, though not

identical in value, in size range between the United States dollar and the French franc.

In the determination of the coins to be minted the size of the unit and the method of reckoning are important. As a rule the nations with small units have coins of lower value than those with large, the smallest representing one-hundredth part of the unit. The countries which use the franc system, for example, usually have a coin about equal in value to one-fifth of a cent. The other fractional coins which are most common wherever the decimal system is used represent values equal respectively to two, five, ten, twenty, or twenty-five and fifty times the smallest coin. In France and Belgium, for example, there are five-, ten-, twenty-, and fifty-centime pieces; in Germany one-, two-, five-, ten-, twenty-, and fifty-pfennig pieces; in Austria-Hungary one-, two-, five-, ten-, twenty-, and fifty-heller pieces; in the United States one-, two-, five-, ten-, twenty-five-, and fifty-cent pieces, etc., etc. Experience has shown that coins of these denominations are most convenient for purposes of reckoning and making change. In the English system the subdivisions are quite different, the coins in most common circulation being the half-penny, penny, sixpence (equal in value to six pennies), shilling (equal in value to twelve pennies), and one-, two-, two-and-a-half-, five-, and ten-shilling pieces. The large coins almost universally represent five, ten, twenty, and sometimes fifty times the value of the unit, paper money being used for higher denominations.

3. The size, weight, and fineness of coins.—The denominations of the coins once determined, the size, weight, and substance are dictated chiefly by convenience, and in this respect the different systems exhibit remarkable similarity. In the countries with the small

units the smallest coin and those representing two, five, ten, and twenty times its value are made of cheap metals, such as copper, bronze, or nickel; those representing half the value of the unit or fifty times the value of the smallest coin, the unit, and its multiples up to five, are made of silver, and the coins of higher denominations of gold. In other countries coins of corresponding value are made of the same metals. In the United States, for example, the one- and two-cent pieces are copper, the five-cent piece nickel, the ten-, twenty-five-, and fifty-cent pieces and the dollar coins are silver and the others gold. In England the penny, half-penny, and farthings are bronze, the sixpence, shilling, two-, two-and-a-half-, and five-shilling pieces silver, and the coins of higher denominations gold. In Germany the one- and two-pfennig pieces are copper, the five- and ten-pfennig pieces nickel, the twenty- and fifty-pfennig, one-, two-, and five-mark pieces are silver and the other coins gold. In France the five- and ten-centime pieces are copper, the fifty-centime, one-, two-, and five-franc pieces silver, and the coins of higher denominations gold. Indeed, as nearly as the size of their respective units will permit, the coins of the various nations correspond to each other in size, weight, and substance, a fact which clearly shows the universal dominance of commercial interests in monetary matters. Despite the fact that the manufacture of coins is a government monopoly the world over, and despite the differences in the history, political characteristics, and economic and social policies of the different nations, common commercial needs have given to their coinage systems the same general features.

In order to render gold and silver coins more durable and thus to protect them as much as possible from loss by abrasion, the pure metal is usually mixed with copper or,

in the case of the gold coins, sometimes with a mixture of copper and silver. This admixture is known as alloy, and the metal thus hardened is known as *standard* gold or *standard* silver to distinguish it from the pure metal. The most common practice at the present time is to use nine parts of pure gold or silver to one part of alloy, and the coins manufactured from metal of this standard are said to be nine-tenths fine. The process of increasing largely the proportion of alloy to pure metal is called *debasement*, a practice which, as we have previously noted, was very common in the Middle Ages and was one of the reasons for making coinage a government monopoly and for surrounding it with all possible safeguards.

4. The naming and stamping of coins.—The naming of coins is a purely arbitrary matter, and practice varies widely in this particular. The tendency in modern times seems to be towards employing the names used in the system of accounting. For example, in this country we commonly call our gold coins two-and-a-half-dollar, five-dollar, ten-dollar, and twenty-dollar pieces. The official names, however, are the quarter-eagle, half-eagle, eagle, and double-eagle, these names being derived from the figure of an eagle stamped upon one side of the coin. In England the practice of employing special names is more common, her gold coins being universally known as the sovereign and half-sovereign, and her silver coins as crowns, half-crowns, florins, shillings, and sixpences. With the exception of the two last mentioned all these names are derived from devices on the coins or from old customs. Until comparatively recent times this practice was almost universal, the names of the reigning monarch or of the king who first ordered the coin minted being the most commonly employed. As examples may be mentioned the French Napoleons, the Prussian Friedrich

d'ors, and the English George d'ors. Such devices as the figure of an angel, a lamb, a pig, and the rising sun gave names to coins of considerable importance in the Middle Ages. Special names are frequently conferred upon coins by popular usage; as, for example, in this country the names nickel and copper for our five-cent piece and penny. Our twenty-five-cent piece, or quarter of a dollar, is known by various peculiar names in different parts of the country, as, for instance, the "bit" on the Pacific coast and in the South.

Besides the purpose of ornamentation the devices stamped upon coins are designed to serve as means of preventing "sweating" and clipping and of rendering easy the detection of abrasion. The milled or indented edge, the practice of stamping both sides, and the circular form of coins are explained in this way. So far as possible, it is also desirable to use designs which are difficult to copy and which may thus aid in the detection of counterfeits.

5. **Seigniorage.**—The expenses of coinage are paid in two different ways. Sometimes individuals are permitted to bring gold or silver bullion to the mints and have it transformed into coin absolutely free of charge. In such a case the expenses of coinage are paid out of the ordinary revenues of the government and are a charge upon the nation as a whole in the same sense as other ordinary public expenditures. Sometimes, however, governments exact payment for coinage in the form of the retention of a certain percentage of the bullion brought to the mint by private individuals. This practice is entirely similar to that frequently employed by millers in rural districts. Farmers who take wheat to the mill usually receive in flour something less than the full product, the miller retaining a certain amount as payment

for his services and the use of his mill. In the same way when private individuals bring gold and silver to the mint, governments sometimes exact a toll in the form of a certain percentage of the metal deposited. The amount thus exacted is called *seigniorage*, and the practice of meeting the expenditures of coinage in this way is ordinarily known as *the taking of seigniorage*.

At the present time the amounts exacted are usually sufficient simply to pay the actual expenses of the process, but formerly it was common to take much larger sums. During the Middle Ages persons who possessed the right of coinage not infrequently retained a considerable portion of the metal which was brought to them. On account of the peculiar notions of that day regarding the power of monarchs to fix arbitrarily the value of money this practice was not considered in any sense improper, and was not supposed to involve any particular injury to the public. Indeed, the business of minting was looked upon as a proper source of public revenue, and as much as possible was made out of it.

In order to distinguish between the practice of merely paying necessary expenses by means of this toll and of exacting an additional amount for purposes of gain, a French writer, M. Chevalier, has proposed that the former practice be known by the name of *brassage* and the latter by the name of *seigniorage*. M. Chevalier's suggestion, however, has not been generally followed, and the term seigniorage has ordinarily been employed to apply to both practices. It would be better, however, not to use the term seigniorage to apply to certain gains accruing to the government from coinage. It is now the universal practice to refuse to private individuals the right to have silver transformed into subsidiary coins, and since their intrinsic value is always less than the

value at which they circulate, a considerable gain may accrue to the government from their manufacture. The amount of profit thus derived, however, is diminished and may be entirely offset by their redemption in standard money, to which the government is usually obligated by law. In any case, the gain cannot properly be classed as a charge made to cover the expenses of coinage, and should, therefore, be separately considered and not confused with seigniorage. It is questionable also whether certain other gains sometimes arising from coinage should be classed as seigniorage. Our government, for example, has derived some profit from the manufacture of silver dollars, coins which until recently could not be classed as subsidiary. To put such profits in the same class with tolls exacted from persons who bring gold to the mint is to confuse two very different things, and such confusion is almost sure to arise when the term seigniorage is applied to both. In view of the fact that this term is often used to mean things so very different, the student should always identify the sort of charge or profit referred to, and consider it separately and on its own merits.

Whether or not it is desirable to take seigniorage is still a moot question. It is claimed, on the one hand, that coins perform a special service, and, therefore, possess a higher degree of utility than the bullion they contain, and that this should be represented by an increase in their value equal at least to the expense of their manufacture. It is frequently said that there is no more reason why a coin should represent the exact value of the material out of which it is made than that a steel rail should have the same value as the iron it contains. It is also urged that the taking of seigniorage acts as a check upon the melting-down and exportation of coin. In case

the government freely transforms bullion into coin, metal-workers are quite as apt to secure the gold and silver needed for their purposes by the melting-down of coins as by the purchase of bullion upon the open market. Whenever for any reason, too, there is a demand for gold for exportation, coins are quite as apt to be sent as bullion, if their market value is precisely the same. If no seigniorage is charged, it is urged, the government is thus obliged to incur an unnecessary expense in the manufacture of coins which in many cases remain in circulation for only a short period; and since coins are designed for purposes of circulation only, it is urged that some check should be placed upon their illegitimate use.

The advocates of free coinage, on the other hand, emphasize the importance of a perfectly free movement of the precious metals from country to country and from the arts to the mints and *vice versa*. A proper distribution of the precious metals throughout the world demands that they should flow freely from one country to the other whenever there is even a small difference in value between two markets. Any obstruction of this free movement is sure to produce an artificial level of prices, and thus to contribute to a lack of stability in the business world. It is equally important, it is claimed, that a proper distribution of metals between their various uses should take place, and, hence, that no more gold should take and retain the form of coin than is necessary for the economical transaction of the commerce of the world. Every encouragement possible, therefore, should be given to the melting-down of coins for use in the arts whenever for any reason their quantity is excessive. In reply to the argument that the people should not be burdened with the expense of minting coins which are destined for the melting-pot or for exportation, it is said that the govern-

ment is quite as much justified in furnishing the community with good metallic money at the general expense as in furnishing a good judicial system or any other public service.

In order properly to weigh these arguments a number of considerations are necessary which must be deferred to later chapters of this book. It is possible here, therefore, only to state clearly the nature of the questions involved. First of all, it should be noted that at the present time the problem of seigniorage concerns only standard coins. There is no difference of opinion among economists or statesmen regarding the proper treatment of subsidiary coins, and, as we have already said, it is questionable whether the term seigniorage should be applied to the gains arising from the minting of these. That gold is the standard of value of the most important nations of the present day and that its more extended use in this capacity is probable are facts which also affect the question, especially when the constantly increasing use of credit money is considered. Since gold is suitable only for coins of large denominations, and since many forms of paper money can, therefore, be conveniently substituted for it in the ordinary circulating medium, the chief use of this metal tends to a greater and greater extent to become that of paying balances between different countries and between different localities in the same country. For this purpose properly assayed and stamped bars of bullion can be used quite as well as coins. The nature of the question has also changed somewhat on account of the increasing importance of the freedom and ease of movement of gold which is involved in its more extended use in the payment of balances. For these reasons the importance of the seign-

iorage question has somewhat diminished, and the power of governments to greatly enhance the value of coins by such a charge is also much less than formerly.

6. Coinage systems of the chief commercial countries.—A brief description of the coinage systems of the chief commercial countries of the present day may serve as an illustration of the principles which we have been discussing and as an aid to the study of many topics which will be taken up in the succeeding chapters.

A. *The United States.*—The coins at present in circulation in the United States may be classified as gold coins, silver dollars, subsidiary silver, and minor coins. The gold coins are the double-eagle, the eagle, the half-eagle, and the quarter-eagle, weighing respectively 516, 258, 129, and $64\frac{1}{2}$ grains of standard gold; that is, of a mixture consisting of nine parts of pure gold to one part of copper. The pure gold in the eagle weighs, therefore, $232\frac{5}{10}$ grains. These coins are legal-tender in unlimited quantities for twenty, ten, five, and two and one-half dollars respectively, and they are minted free of charge for whoever brings metal to the mint of the requisite degree of fineness. For nearly half a century after the establishment of the first United States mint in 1793 the eagle contained 270 grains of standard gold $.916\frac{2}{3}$ fine, and the alloy consisted of silver and copper mixed. The change to our present system was authorized by the acts of June 28, 1834, and January 18, 1837. For a time also a seigniorage charge of one-fifth of one per cent was imposed, but this regulation was repealed by an act passed January 14, 1875.

The silver dollar of the United States has had a very interesting and eventful history. It was one of the coins authorized by the mint act of 1792, and at that time contained 416 grains of standard silver or $371\frac{1}{4}$ grains

of pure metal. The alloy consisted of copper, and the proportions were 892.4 parts of pure metal to 107.6 parts of copper. When the gold coins were modified as indicated in the preceding section the weight of the silver dollar was reduced to 412½ grains by diminishing the amount of alloy and raising the standard to nine-tenths fine, its content in pure silver thus remaining unchanged. From the beginning this coin has been invested with full legal-tender power, and to 1873 it was coined freely in unlimited quantities, but since that time it has been coined on government account only, and the amount issued has been strictly regulated by law. For example, an act passed in 1873 discontinued its coinage completely, omitting it from the list of coins authorized to be issued from the mints. The so-called Bland Act of 1878 again restored it, and ordered the coinage of such a quantity as would consume not less than two nor more than four million dollars' worth of silver monthly. This act was repealed in 1890, and the coinage of silver dollars limited to such a quantity as might be needed for the redemption of certain treasury notes, the issue of which in the purchase of silver bullion was at the same time authorized. Indeed, the battle of the standards in the United States has been waged over this coin, and the fortunes of the combatants have been reflected in the laws which have fixed the quantity which might be minted, the bimetallists fighting for its free and unlimited coinage and the gold monometallists for its reduction to the rank of a subsidiary coin. While it would be premature, perhaps, to declare this controversy ended, it is proper to record the fact that since 1893 the monometallists have controlled legislation on this subject, and in an act passed in 1900 practically accomplished their purpose.

Our subsidiary silver coins are the half-dollar, quarter-

dollar, and dime, weighing respectively 192.9, 96.45, 38.58 grains of standard, or 173.60, 86.805, 34.725 grains of pure silver. The amount of the issue was limited by the acts of July 14, 1875, and April 17, 1876, to about forty-two million dollars, the sum needed to retire the so-called fractional paper currency of that time.* This limit has been increased from time to time by special legislation. These coins are legal-tender to the amount of ten dollars only, and are redeemable at the treasury or any subtreasury of the United States in sums or multiples of twenty dollars. They are issued in like quantities for lawful money to any person desiring them, and delivered by the government free of charge. At one time half-dimes and three-cent pieces of silver were issued from the mint, but their coinage was ordered discontinued by the mint act of 1873.

It will be observed that the amount of pure metal in these coins is not proportionate to that in the silver dollar. Two half-dollars, for example, contain 347.25 instead of 371.25 grains of pure silver. This difference is explained by the fact that in 1853, when the act was passed establishing and regulating our subsidiary currency, it was not the intention to put the dollar coin in the subsidiary class, and hence no change was made in its weight. Precisely what was the intention of Congress at that time regarding the silver dollar it is difficult now to determine. Since this coin had not been in active circulation for many years, and since its metallic value at the time was considerably more than its face value,

* From 1862 to 1875 our currency consisted almost exclusively of government notes not redeemable on demand. The fractional currency to which reference is here made consisted of small notes of denominations below a dollar, and for which was substituted the forty-two millions of fractional silver.

some writers * have claimed that Congress regarded it as an obsolete coin, and did not desire to reintroduce it into the currency. Others claim that the framers and advocates of the act of 1853 were still believers in bimetallism and intended to retain the silver dollar as a standard coin side by side with the gold coins. However this may be, the metallic content of the fractional coins was reduced in order to prevent their disappearance from circulation through the operation of Gresham's law. Inasmuch as the value of silver measured in gold has fallen very much since that time, the disparity between the face and metallic value of these coins is much greater now than it was then.

The minor coins of the United States are a five-cent piece, weighing 77.16 grains, and made of a mixture of copper and nickel in the proportion of 75 parts of the former to 25 parts of the latter, a one-cent coin weighing 48 grains and consisting of a mixture of copper, tin, and zinc in the proportion of 95 parts of the former to 5 parts of the two latter materials, and a two-cent coin of twice this weight and made of the same mixture. These coins are legal-tender to the amount of twenty-five cents only, are redeemable at any subtreasury in sums of twenty dollars or more, and are delivered free of charge in similar quantities to any person who is willing to pay lawful money for them. Their supply is regulated by the director of the mint under the supervision of the Secretary of the Treasury, the purpose being to keep in circulation precisely the quantity which is actually needed for the commerce of the country.

B. *The British Empire.*—The present British Empire includes, besides Great Britain, a large number of de-

* Professor Laughlin, for example.

pendencies situated in different parts of the world. The limits of this book render impossible a complete account of all the coins in circulation in the various parts of the empire, and we shall therefore confine our description to those of England, India, and Canada.

The coins of England, like those of the United States, may be classified as gold, subsidiary silver, and minor coins. The gold coins consist of one-half-, one-, two-, and five-sovereign pieces, the first two only, however, being generally used. The sovereign consists of 123.274 grains of standard or 113.001 grains of pure gold, the standard gold of England being thus 916.00$\frac{2}{3}$ fine. These coins are legal-tender to any amount, not only in Great Britain, but also in Australasia, the Dominion of Canada, Cape Colony, Malta, Natal, and some of the West India colonies. In theory they are coined freely for any individual who deposits gold at the mint. In practice, however, a very small charge is exacted, on account of the mediation of the Bank of England. The gold destined for coinage is usually deposited with this bank, which pays for it £3 17s. 9d. per ounce if it is of the proper standard. This price is one and one-half pence less than the value of the gold as defined by law and recognized at the mint, and thus enables the bank to make a small profit, which is regarded as no more than sufficient to cover the interest on its advances and a moderate remuneration for its services. The chief regulations at present in force regarding the gold coinage date from June 16, 1816.

The silver coins of England are the crown, double-florin, half-crown, florin, shilling, sixpence, and threepenny piece, worth respectively five, four, two-and-a-half, two, one, one-half, and one-fourth shillings. The crown and double-florin pieces are coined in very small quantities

and are not extensively used. The shilling, which is the unit silver coin, weighs $87\frac{3}{11}$ grains of silver .925 fine. The weight of the other coins bears the proportion to this one indicated by the values just mentioned. These coins are legal-tender only to the extent of two pounds, and they are manufactured on government account solely. They constitute a genuine subsidiary currency, like our half-dollars, quarter-dollars, and dimes. England possesses no coin which occupies the peculiar position of our silver dollar.

Her minor coins are pennies, half-pennies, and farthings, and they are made of ninety-five parts copper, four of tin, and one of zinc. One pound avoirdupois of this compound is coined into 48 pennies, 80 half-pennies, or 160 farthings.

The coinage system of the Dominion of Canada is in all essentials like that of the United States. The unit of value is the gold dollar, containing 25.8 grains of standard gold nine-tenths fine or 23.22 grains of fine gold. Accounts in Canada, as in the United States, are kept in dollars and cents. There, as here, silver coins are legal-tender up to ten dollars, copper coins up to twenty-five cents. The gold coins of Great Britain and the United States are legal-tender in Canada at their bullion value; that is to say, the sovereign is legal-tender for $\$4.86\frac{2}{3}$, the gold eagle of the United States for $\$10.00$, and their multiples and subdivisions in proportion. The Governor-General of Canada also has the power to declare any other foreign gold coin legal-tender at its intrinsic value.

The coinage system of British India is important on account of the commercial relations existing between that country and England, and especially because of the part which it has played in the silver controversies of recent times. The unit of value in British India is the silver

rupee, which consists of 180 grains of standard or 165 grains of pure silver, the standard silver being eleven-twelfths fine. The other silver coins are the half-rupee, the quarter-rupee, and the one-eighth-rupee. The rupee and half-rupee are legal-tender in unlimited amounts, provided the coins have not lost more than two per cent in weight and have not been clipped or filed or in any other way defaced. The quarter- and the one-eighth-rupee pieces are legal-tender only for fractions of a rupee.

The gold coins of India are the mohur, or so-called fifteen-rupee piece, the two-thirds mohur, the one-third mohur, and the double-mohur. The weight of the mohur is precisely the same as that of the rupee; that is to say, it contains 180 grains of standard or 165 grains of pure gold. Since the establishment of the gold standard in India in 1893 those coins have been legal-tender in unlimited amounts, the silver coins being issued in limited quantities and redeemable in gold.

The minor coins of India are made of copper, and are called the double-pice, or half-anna piece, the pice, half-pice, and the one-third-pice, or pie. The weight of the double-pice is 200 grains of copper, and that of the other coins in proportion. These coins are legal-tender only for fractions of a rupee.

C. *France.*—As has been previously noted, the unit of value in France at the present time is the franc, divided into one hundred centimes. The gold coins authorized by law are one-hundred-, fifty-, twenty-, ten-, and five-franc pieces. Of these the twenty- and ten-franc pieces are the only ones in ordinary use. The ten-franc piece consists of 49.78 grains of standard gold, nine-tenths fine, or of 44.802 grains of pure gold. The weight of the French unit in pure gold is, therefore, 4.4802 grains. All gold coins are legal-tender in unlimited amounts, and

are minted for private individuals at a charge of six and seven-tenths francs per kilogram of gold.*

The silver coins are five-, two-, and one-franc, fifty-centime and twenty-centime pieces. The five-franc piece consists of 385.8 grains of standard silver, nine-tenths fine, or 347.22 grains of pure metal, and has had a history in some respects similar to that of the silver dollar of the United States. From 1865 to 1874 they were coined in unlimited amounts at a charge of one and two-thirds francs per kilogram, but after the latter date they were issued for government account only, and since 1878 their coinage has been completely suspended. The obligation of the government to redeem them in gold is now recognized, and they must, therefore, be regarded as a part of the subsidiary currency of the country, though their metallic value is higher than that of the other coins of this class.

The two- and one-franc, fifty-centime and twenty-centime pieces have been subsidiary coins since 1865. The franc piece, which is the unit coin, contains 77.16 grains of standard silver .835 fine, its content in pure metal being, therefore, 64.428 grains, or 5.016 grains less than one-fifth of the metallic content of the five-franc piece. The two-franc, fifty-centime, and twenty-centime pieces are proportionate in weight and of the same fineness as the franc piece, and with it are legal-tender to the amount of fifty francs in payments among individuals and to the amount of one hundred francs in payments to the states of the Latin Union. The aggregate of this subsidiary coinage is limited to six francs per capita.

The minor coins of France consist of ten-, five-, two-,

* The kilogram equals 1000 grams, and the gram, 15.432 grains.

and one-centime pieces, made of ninety-five parts copper, four parts tin, and one part zinc. The one-centime piece weighs one gram or 15.432 grains, and the other pieces proportionate amounts. These coins are legal-tender to the amount of five francs only.

D. *Italy, Belgium, Switzerland.*—On December 22, 1865, these three states formed with France the so-called Latin Monetary Union, in accordance with the terms of which their coinage systems were made substantially the same. It is, therefore, only necessary here to note a few peculiarities which were not removed by the treaty arrangements between the different states.

In Italy the unit of value is called the *lire*, and its subdivisions *centesimi*. They are the exact equivalents, however, of the French franc and centimes. The denominations of her gold and silver coins are precisely the same as those of France, the name lire being in each case substituted for that of franc. The minor coins of Italy happen also to be of precisely the same denominations as those of France, although this is not required by the treaty arrangements between the two countries. In Belgium the denominations and the names of the coins are precisely the same as in France, the only peculiarity consisting in the fact that her twenty-, ten-, and five-centime pieces are made of nickel instead of silver and copper. In Switzerland the same coins and names are employed as in France and Belgium, the only peculiarity here being a minor coinage consisting of a nickel piece of five centimes and a copper piece of one centime.

E. *Germany.*—The present coinage system of Germany dates back to the foundation of the empire in 1871. By laws passed in that year and in 1873 a common system based on the gold standard was established for all the states, several different systems having previously existed

side by side. At the present time the unit is the gold mark, divided into one hundred pfennige, and consisting of 5.1457 grains of gold, nine-tenths fine. Twenty-, ten-, and five-mark pieces of full legal-tender power are coined at a charge of three marks per pound of pure metal.

All silver coins in Germany are subsidiary. They are five-, two-, and one-mark, fifty- and twenty-pfennig pieces. The mark contains 77.16 grains of pure silver or 85.733 grains of standard silver nine-tenths fine. These coins are legal-tender to the extent of twenty marks only, and the amount is limited to ten marks per capita. They are redeemable in gold at the public treasury. The German minor coins are ten- and five-pfennig nickel pieces, and two- and one-pfennig copper pieces.

There are still in circulation in Germany about 150,000,000 of the silver thalers which were coined by the separate states before the Union. The complete retirement of these coins was contemplated at the time of the reform in the early seventies, but for various reasons this part of the programme has not been carried out. These coins pass at the value of three marks each, and are legal-tender to any amount.

F. *Austria-Hungary.*—The present coinage system of the Austro-Hungarian monarchy is somewhat confusing to the foreigner, owing to the fact that it is still in a transition state. In 1892 a law was passed having for its object the reform of the coinage system and the ultimate resumption of specie payments. For half a century or more previous to that date the currency had consisted almost exclusively of depreciated government notes. The new coinage system authorized by the act of 1892 established the gold *krone*, divided into one hundred *heller*, as the unit of value. The weight of the new unit was fixed at .33875338 grams or 5.23774215016 grains

of standard gold nine-tenths fine. Twenty- and ten-krone gold coins were authorized and regulations for the exchange of the new coins for the old established.

The silver coins are subsidiary and consist of krone, half-krone, and fifty-heller pieces. The krone is the exact equivalent of the French franc and weighs accordingly 5 grams or 77.16 grains of standard silver .835 fine. These coins are legal-tender only to the extent of fifty kronen and the amount issued is limited to 200,000,000 kronen, of which 60,000,000 are assigned to Hungary. They are accepted in unlimited amounts by the government.

Previous to 1892 the Austrian unit was the silver florin of one hundred kreutzers, containing 11.111 grams or 171.464952 grains of fine silver, or 12.345 grams or 190.50804 grains of standard silver nine-tenths fine. Two- and one-florin silver pieces were minted and were legal-tender in unlimited amounts. There were also coined eight- and four-florin gold pieces, the former weighing 6.452 grams or 99.567264 grains of standard gold nine-tenths fine, and the latter one-half that amount.

In the substitution of the new system for the old many difficulties have been met, and its complete accomplishment will probably require considerable time. The act of 1892 made two kronen of the new coinage equal to a florin of the old for general commercial purposes and in the redemption of the old silver coins, but, on account of the fact that the relative amounts of pure metal in the old and new gold coins did not correspond to this ratio, special and more complicated arrangements were necessary for the retirement of the old eight- and four-florin pieces. In consequence at the present time one meets in Austria the peculiar phenomenon of a government refusing to accept its own standard coins at par in all payments.

G. *The Scandinavian Union.*—Since 1875 Sweden, Norway, and Denmark have enjoyed a common currency system. The present unit is the gold *krone*, divided into one hundred *öre*, and containing 6.914 grains of metal nine-tenths fine. Twenty- and ten-krone pieces are coined and possess full legal-tender power. The silver coins are all subsidiary, and consist of two- and one-krone pieces, weighing respectively 15 and 7½ grams or 231.48 and 115.74 grains of standard silver eight-tenths fine, and are legal-tender to the amount of twenty kroner. There are also coined fifty-, forty-, and twenty-öre pieces, weighing 5, 4 and 2.42 grams or 77.16, 61.728, 37.34544 grains respectively of silver six-tenths fine, and ten-öre pieces weighing 1.45 grams or 6.9444 grains of silver four-tenths fine. These latter coins are legal-tender only to the amount of five kroner. Each state redeems its own subsidiary coins in gold in sums of ten kroner or multiples thereof. No limit is placed upon the amount of these coins by treaty arrangement, each state being left to regulate that according to its own needs and judgment. The minor coins of the Union are five-, two-, and one-öre pieces of copper.

H. *Holland.*—The unit of account in Holland is the *florin*, or *gulden*, divided into one hundred *cents*. Twenty- and ten-florin pieces of gold are coined, weighing respectively 13.440 and 6.720 grams or 103.07 and 51.85 grains of standard gold nine-tenths fine. In silver there are coined five-, ten-, and twenty-five-cent pieces, florins, half-florins, and rix-dalers, the latter being equal to two and one-half florins. The silver florin weighs 10 grams or 154.32 grains of silver .945 fine. The rix-daler is of exactly the same weight as the five-franc piece in circulation in the Latin Union, but is made of finer metal and is thus slightly superior to it in value. The twenty-five-, ten-, and five-

cent pieces weigh respectively 55.1694, 21.6048, and 10.55 grains, but are only .640 fine. Since 1877 the coinage of silver in Holland has not been free to private individuals, but the rix-dalers, florins, and half-florins are full legal-tender. The other silver coins are legal-tender for sums of ten florins and under only. Minor copper coins of the value of two and a half cents, one cent, and one-half cent are provided.

I. *Russia.*—The present currency of Russia consists chiefly of depreciated government paper, but a new coinage system dating from 1886 should be described on account of its importance in the foreign exchanges of the country. The unit is the silver ruble, divided into one hundred kopecks, and its weight is 308.571 grains of standard silver nine-tenths fine. The coins are one-, one-half-, and one-quarter-ruble pieces. Gold fifteen-, ten-, seven-and-a-half-, and five-ruble pieces are also coined, the former weighing 199.137 grains of standard gold nine-tenths fine, or 179.223 grains of pure gold. A ducat, equal to three rubles in value, is also minted. These gold coins are chiefly useful in the foreign commerce of the country, their high intrinsic value making it unprofitable to use them at home. The silver ruble, half-ruble, and quarter-ruble pieces alone are full legal-tender. Subsidiary coins of denominations twenty, fifteen, ten, and five kopecks, made of silver five-tenths fine, and the twenty-kopeck piece, weighing 3.599 grams or 55.539768 grains, are legal-tender only to the extent of three rubles, but are receivable in unlimited amounts by the government.

J. *Latin America.*—It is impossible in short space to give a complete account of the numerous monetary systems employed in the various states of America which formerly were dependants of Spain and still show in their

monetary systems the influence of the mother country. We shall present, therefore, only a few facts descriptive in a general way of conditions in that part of the world. The most widely extended system of accounting in Latin America is that of which the unit is the *peso*, divided into one hundred *centavos*. In most of the states in which this system is employed the standard is silver, and while there is some approximation towards uniformity in the size and value of their unit coins, there are nevertheless considerable variations. For example, the Mexican peso weighs 417.79 grains of silver .972 fine, while that of many of the Central and South American states weighs 385.8 grains of silver nine-tenths fine, being the exact equivalent of the five-franc piece of the Latin Union. The states which have thus attempted to assimilate their coinage to that of the Latin Monetary Union usually issue half- and quarter-peso pieces of the same relative weight and fineness as the peso, and smaller coins, commonly ten- and five-centavo pieces, of .835 fineness. To this group belong the five Central American states, Guatemala, Costa Rica, Salvador, Nicaragua, and Honduras, and also Ecuador and Colombia. The *peso* of the Argentine Republic, the *sol* of Peru, and the *boliviana* of Bolivia are also the exact equivalents in weight and fineness of the five-franc piece of the Latin Union, but in all of these states the divisional coins are of the same proportional weight and fineness as the peso.

The gold standard prevails actually in Uruguay and nominally in Chili. The unit in the former state is the gold *peso*, weighing 1.697 grams or 26.188104 grains of standard gold .917 fine. The silver coins of Uruguay consist of the *peso*, the exact equivalent in weight and fineness of the five-franc piece of the Latin Union, and of fifty-, twenty-, and ten-centavo pieces of proportionate

weight and fineness. The actual currency of Chili consists of irredeemable paper, but by an act passed in 1896 a gold peso weighing 23.538 grains of standard gold nine-tenths fine was authorized. Her silver currency is similar to that of the other states who have patterned after the Latin Union.

The Republic of Brazil also has a gold standard. The unit is the *milreis* of one thousand reis, weighing 13.8347 grains of standard gold .917 fine. The gold coins are twenty-, ten-, and five-milreis pieces. The silver coins are subsidiary and consist of two-, one-, and one-half-milreis pieces, the silver milreis weighing 196.758 grains of standard silver .917 fine. Minor nickel coins of twenty reis and bronze coins of forty reis are issued. Brazil, like most of the South American states, has a forced circulation of depreciated government paper, and consequently its gold and silver coins are not found in general circulation.

K. *China and Japan.*—China has no complete coinage system. Since 1890 she has minted some small silver coins and a mass of minor brass coins called *cash*. The monetary transactions of the country are usually conducted in foreign silver coins or in bullion. The unit of weight for monetary purposes is the *tael*, which, however, is not uniform in the different parts of the Empire. Taking the Haikwan or government tael as a basis, one hundred of these are equal to 111.4 of the Shanghai taels, 101.75 of the Amoy, 105 of the Tientsin, and 102.15 of the Canton. The Haikwan tael is equivalent to 590.35 grains, while that of Canton, most commonly used in mercantile transactions, is equivalent to 579.84 grains. There is a Shanghai tael consisting of 564.2 grains of silver .898 fine. The most popular coin in China seems to be the Mexican dollar, which circulates

freely and becomes legal-tender when stamped by the proper Chinese authorities. The silver dollar of the United States also circulates in China. At one time a special coin called the trade-dollar was issued from the mints of the United States for use in the China trade, but it was retired after a few years.

The Japanese coinage system has undergone a number of changes since 1871. Very recently, since the payment of the Chinese indemnity, the gold standard has been established, apparently upon a durable basis. The unit is the gold *yen*, divided into one hundred *sen*. Twenty-, ten-, five-, two-, and one-yen pieces are minted, the latter weighing 25.72 grains of standard gold nine-tenths fine, and being thus very nearly the equivalent of the gold dollar of the United States. The silver coins are subsidiary and are made of metal nine-tenths fine. Fifty-, twenty-, ten-, and five-sen pieces are coined, the former weighing 208 grains of standard silver. Minor coins consisting of a five-sen nickel piece, and of two-, one-, and one-half-sen copper pieces are also minted.

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On the subject of seigniorage see Walker's *Money*, ch. x; Martin's *Seigneurage and Mint Charges*, Seyd's *The Question of Seniorage and the Charge for Coining;* Lexis's *op. cit.;* and Nasse, ch. vi.

CHAPTER VI.

GOVERNMENT PAPER MONEY.

From the standpoint of origin or source of issue the most important kinds of paper money may be grouped under two heads, government currency and bank currency. At the present time banks issue much the larger proportion, but government currency is still common, and it has played so important a rôle in the political and economic history of modern times, as well as in the history of economic science, that an understanding of its peculiar characteristics is very important, and its study most instructive.

Two varieties of government currency must be distinguished, known respectively as *convertible* and *inconvertible* notes. By the former are meant promises of the government to pay *on demand*, and by the latter promises to pay *at some indefinite and undetermined date in the future*. Both varieties are usually issued in fixed and convenient denominations, and made legal-tender in the payment of all debts public and private; though the latter quality is not universally or necessarily attached to convertible notes. The government promise may be clearly expressed in the statement written or printed on the note, or it may be found only in the statutes by which the issue is authorized. In spite of external similarities, the two varieties are subject to different laws and must be separately considered.

1. **Inconvertible government notes.**—This kind of currency has usually, and perhaps always, been issued

in times of fiscal exigency. When governments have found it difficult or impossible to raise funds, either by taxation or by loans of the ordinary sort, they have commonly resorted to the expedient of forcing a loan by issuing these notes. Two of the most noted examples of this method of procedure are furnished respectively by the history of France during the Revolution, and by our own country during the Civil War.

A. *French assignats and American legal-tender notes as illustrations.*—In 1789 the French government was on the verge of bankruptcy. Its annual expenditures greatly exceeded its receipts; it had a large floating debt; and its bonds were practically unsalable at any price. Some means of meeting expenses had to be devised, and the National Assembly created the so-called *assignats*. They were non-interest-bearing, legal-tender notes, for the security of which the confiscated lands of the clergy were pledged. They were paid out by the government for all sorts of purposes, and, when one issue was exhausted, another was authorized, the confiscated estates of the nobles who had emigrated and other national property being successively mortgaged as security. In the beginning they were readily accepted by the people and no change in prices was observable which could be attributed to their influence. As the quantity increased, however, in much greater proportion than the currency needs of the country demanded, the excess could only be used as a means of investment, and for this purpose they were never regarded as "gilt-edged" on account of the instability of the government and the uncertain issue of the war. Accordingly they very soon began to depreciate, and, once on the downward path, fell with remarkable rapidity, and finally became absolutely worthless.

In 1862 the Secretary of the Treasury of the United States by authority of Congress adopted this same expedient in order to meet the extraordinary expenditures occasioned by the war. Many writers on finance have doubted the necessity for this extreme measure at the time it was adopted, and it is certain that our finances were not then in so serious and deplorable a state as were those of France in 1789. Whatever may be the truth about this matter, however, the notes were issued. They were made legal-tender by an act of Congress, and several hundreds of millions of dollars of them were forced into circulation. Like the French assignats, they soon began to depreciate and finally fell to less than one-half their face value.

B. *Depreciation a characteristic of this form of currency.*—The depreciation in value which is the most striking phenomenon exhibited in the two instances we have cited is characteristic of every issue of these notes which has been sufficient in quantity to saturate the currency. Indeed, no government has been able to maintain such notes at par for any considerable length of time. We may, therefore, properly regard depreciation as a characteristic feature of this form of currency, and consider its merits and defects in the light of this fact. It is worth while at the outset, however, to seek for an explanation of this peculiar phenomenon.

As we have already stated, these notes are promises of the government to pay at some indefinite date in the future, and they are usually issued at times when the treasury is financially embarrassed. Uncertainty regarding their payment is, therefore, unavoidable. Under the best of circumstances the time of payment is uncertain, and ordinarily there is also uncertainty regarding the ability of the government to pay, and sometimes regard-

ing her willingness and regarding the kind of coin which will be employed in the payment. In the cases of France and the United States in 1789 and 1862 great wars were in progress the outcome of which could not be foreseen. In France it was well known that the obligations of the General Assembly might be repudiated if the monarchy was restored, and, when later on it was observed that the governments which succeeded each other with great rapidity were by no means disposed to be bound by the acts of their predecessors, the possibility that the notes might not be paid, even if the revolution were successful, must have suggested itself to all thinking people. In the United States from 1862 to 1865 the issue of the war was doubtful, and the victory of the States which had seceded involved the division of the Union and possibly its complete destruction. At that time no man could have predicted the attitude which the possible government or governments of the future would assume towards the notes then being issued by both parties and forced into circulation as money. The fact that the successful combatant compelled her conquered foe to repudiate the notes she had issued shows that there were good grounds for the uncertainty of which we are speaking. In the decade which succeeded the close of the war a lively and frequently bitter contest was waged in Congress, first over the question whether the notes should not be retained as a permanent part of the circulation of the country and never redeemed in any kind of coin, and afterwards over the question whether their redemption should be made in the silver or the gold coins of the country, the former having an intrinsic value very much lower than the latter.

No principle in financial science is better established than that any kind of uncertainty regarding a negotiable credit instrument affects its market value. The truth of

this principle and the mode of its operation are illustrated every day upon our stock exchanges. An unfavourable report regarding the actual or prospective earnings of a railway lowers the price of its stock and bonds, and those securities most likely to be seriously affected by the earnings of the road show the greatest fluctuations. Speculators base most of their operations upon this principle. The element of time has a well-recognized value upon the markets for securities, so that government or corporation bonds, alike in every particular except the date of payment, sell at different prices, and if any of the terms of a bond or stock certificate lack definiteness or give ground for any kind of uncertainty, the fact will be reflected in a diminution of the price which investors are willing to give for it. This being the case, how could an inconvertible government note, of which the date of payment is entirely uncertain, and which may and probably does possess two or three other elements of uncertainty, be expected to circulate at par?

The fact that inconvertible government notes are legal-tender and a part of the circulating medium has sometimes been supposed to render them proof against the operations of this principle, and the explanation of their depreciation has been sought in other circumstances. The mere fact, however, that people are compelled to take them from the government and permitted to pass them on to others in case they have financial obligations to meet does not render them less sensitive to the ordinary influences of uncertainty. Unless the government also fixes prices, it cannot prevent people from protecting themselves against this uncertainty by charging more for their goods and services and by exacting higher rates on their loans.

In the explanation of the phenomenon of depreciation

great stress is usually laid upon the quantity of the notes issued. It is claimed that, so long as this is not excessive, they will circulate at par, and that the degree of their depreciation is proportionate to the quantity in circulation. This claim, however, is supported only by superficial observation, and the quantity theory of money examined in Chapter IV. Careful statistical investigations* show that there is no fixed relation between the quantity of the issues and the degree of their depreciation, and we have already attempted to point out the fallacies in the quantity theory. Excess of issues, however, is not without influence upon the value of these notes. It affects appreciably the elements of uncertainty upon which we have shown that their depreciation depends. The opinion of investors regarding the ability of the government to pay is certainly influenced by the quantity of the issues, and a government with a very large outstanding debt of this sort is more apt to be tempted by the allurements of partial or total repudiation than one less heavily burdened. The use of inconvertible notes for monetary purposes doubtless partially counterbalances the influence of uncertainty in the early stages of their issue by preventing the necessity of holding them for any considerable period of time, but finally, when the circulating medium has become thoroughly saturated with them, banks and other investors cannot avoid the incorporation of a portion of their savings in this form, and then the risk involved in the various elements of uncertainty which they possess will operate upon their value without obstruction.

C. *The defects of this form of currency.*—On account of their tendency to depreciate, inconvertible notes constitute a very imperfect and dangerous form of currency.

* See Miss Hardy's article in the *Journal of Political Economy.*

First, because, through the operation of Gresham's law, they usually displace all forms of metallic money and thus deprive the community of the advantages of a mixed currency. The reason and method of this substitution have been illustrated in a previous chapter, and it is only necessary here to say that, wherever the depreciation is great, this process is certain to be complete. In both France and the United States, for example, coins completely disappeared from circulation, and it was necessary to issue notes in all the denominations needed for currency purposes.

The second and chief defect of this form of currency is its effect upon prices and upon industry. The depreciated notes become a secondary standard of value; prices necessarily rise, and, so long as the depreciation continues, constantly fluctuate. The result is uncertainty in all commercial calculations. No one knows what the value of money may be from day to day or week to week. The only certainty is that prices will be unstable and subject to changes from purely subjective influences. Every business man must either suspend operations or become a speculator. Shrewd guessing and chance take the place of sound calculation and enterprise. The effect of this sort of thing upon industry is always injurious and sometimes deadly. Even the best habits are not always proof against the insidious influences of speculation in ordinary times, but, when sound business methods are rendered impossible by a fluctuating currency and men are compelled to speculate in order to live, commercial virtues are rendered inoperative and gambling is given a clear field. Even moral sensibilities become blunted under such circumstances, and business men and public servants practise and countenance actions which in normal times would not be toler-

ated. Witness the gradual smothering of the sentiment of financial honour and integrity and the appearance of a number of theories in support of public dishonesty in the French legislative bodies during the régime of the assignats and the mandats, and the rapid decay of legitimate industry under the blighting influence of the fever of speculation which reigned during that period.* Witness also the greenback heresy in the United States and the wild monetary theories which clouded the vision of many of our public men and of a considerable portion of our population for more than a generation, the evil effects of which have not yet ceased to trouble us. These are the legitimate fruits of inconvertible government notes, and they render the infliction of that kind of currency upon a people one of the greatest of national calamities.

2. Convertible government notes.—This class of notes is characterized by the fact that they are redeemable on demand in coin, and are thus exempt from the defect of depreciation. Two varieties should be distinguished and separately considered:—

A. *Silver and gold certificates.*—These may be described as notes issued to take the place of certain coins, and completely covered by the deposit of said coins in the public treasury. As typical of these may be taken our silver and gold certificates. The former were issued to take the place of silver dollars, which were not readily accepted by the people, but which the Bland Act practically compelled the Secretary of the Treasury to force into circulation. It will be remembered that this act ordered the coinage into silver dollars of not less than two nor more than four million dollars' worth of silver monthly. Partly on account of their inconvenient size and weight,

* See Andrew D. White's pamphlet on "Paper Money Inflation in France."

these coins were speedily transferred to the treasury in the payment of public dues and tended to remain there in lieu of gold or other forms of currency. The expedient was therefore tried of issuing certificates of convenient denominations and making them redeemable on demand in silver dollars, a number of which, exactly equal to the face value of the certificates issued, being stored away in the vaults for that purpose. The expedient succeeded, and these notes have constituted a part of our circulation from that time until the present day. Our gold certificates are similar in character, except that they are issued in large denominations only, are redeemable in gold, and are used almost exclusively by banks in the payment of balances.

The utility of this class of notes cannot be questioned. They are more convenient than the coin they represent, and they obviate the loss which is necessarily occasioned by the wear and abrasion of coins in circulation. In these respects, however, they are no better than other forms of paper currency of the same denominations and like them redeemable in standard money. The real problem, therefore, concerns the desirability of the manufacture of the classes of coins which they represent. Regarding gold coins there can be and there is no question in the United States. So long as this metal continues to be our standard of value we shall need to put it up in the form of coins, and since, in such cities as New York, Chicago, Philadelphia, and Boston, large sums must daily be transferred between banks in the payment of balances, gold certificates in large denominations must be regarded as a useful and economical device. Regarding silver dollars a just decision is not so easy to reach, and opinions are divided. Gold monometallists, as a rule, believe that, if they are to be retained as a permanent part of our cur-

rency, they should be reduced to the grade of a subsidiary coin, and assimilated in weight to our half- and quarter-dollars and dimes. It may be questioned, however, whether the coin is needed at all, and whether it might not be better to substitute bank-notes for it. If it is to be retained in any form, however, the utility of substituting certificates for it for ordinary commercial purposes cannot be questioned, and in view of our familiarity with these notes and our dislike of the heavy silver dollars, such substitution is probably desirable.

B. *Treasury notes.*—The second variety of convertible government notes referred to above is characterized by the fact that, while the government guarantees their redemption in standard coin, it does not keep on deposit for that purpose the face value of the notes and does not retire them when once redeemed, but treats them as cash and pays them out again for ordinary expenses or in exchange for standard coin. A good illustration is furnished by our so-called greenbacks and Sherman notes. The former is an inheritance from our inconvertible currency period. When specie payments were resumed in 1879, something over $346,000,000 worth of the old notes were left in circulation. The Secretary of the Treasury was ordered to redeem them on demand in gold, but was denied the power to retire them. The Sherman notes were issued under authority of an act passed in 1890 directing the Secretary of the Treasury to purchase every month at its market value 4,500,000 ounces of silver, and to issue in payment therefor treasury notes redeemable either in gold coin or silver dollars at his option. Since the act also made it the duty of the Secretary to maintain all forms of our currency at a parity with gold, and since the metallic value of silver dollars was at the time but little more than half their

face value, the redemption of these notes on demand in gold was a practical necessity. As in the case of the greenbacks, the Secretary was also forbidden to retire these notes. Before the repeal in 1893 of the clause of this act authorizing the monthly purchase of silver bullion about $150,000,000 worth of notes were issued. Treasury notes similar to these in essentials have been circulated from time to time in other countries, but ours is the most notable attempt to permanently maintain a circulating medium of this sort.

In considering the merits and defects of this variety of notes, it should be observed that the only rational purpose of their employment as a permanent part of the currency is to *supplement* coin. Unlike the silver and gold certificates considered in the preceding section, they are not intended to circulate in the place of certain classes of coins. On the contrary, they are only partially covered by a coin reserve, and they are issued for the purpose of expanding the currency. This fact is clearly presented in the arguments of the advocates of these notes in Congress, who have lauded them as the ideal form of paper money and have proposed to substitute them for bank-notes.

In a previous chapter attention was called to the importance of elasticity in at least certain of the paper elements of the currency, on account of the fact that coin does not *automatically* move from place to place and increase and decrease in quantity in response to the changing needs of commerce. It should here be noted that treasury notes of the sort we are discussing do not possess this very desirable quality. Indeed, they are quite as inelastic as metallic money. Their issue must be authorized by law and their quantity strictly limited. It would be quite unsafe and opposed to all the canons

of sound finance to permit the Secretary of the Treasury or any other public officer to issue them at his discretion, and, even if such power were granted, the notes could not be speedily sent to the places where they might be in greatest demand or their quantity adjusted to commercial needs. Being entirely unable to measure the monetary needs of different localities, at the very best he could order more notes printed when in his opinion the currency needs expansion, and pay them out in the ordinary course of business. It would be the merest chance, however, if the persons or the localities to which the government payments were due were those in need of more currency. When, as is and always must be the case, the quantity to be issued is fixed by statute, an increase beyond such limit, however much needed, is only possible after the slow-moving legislative machinery has been put into operation and more notes authorized. Moreover, their withdrawal from circulation by redemption in coin, when the need for them has passed, does not contract the currency, but simply substitutes coin for the notes. The inelasticity of such notes, therefore, must be conceded, and their maintenance as a permanent element of the currency justified on some other ground, if at all.

The second defect of convertible treasury notes is the fact that they impose upon the government the necessity of keeping on hand a reserve of standard coin sufficient to meet at any and all times the demand for redemption. There are two objections to the assumption by government of such an obligation.

The first is that it may be a source of great expense. The coin reserve must be accumulated by taxation or loans, and in either case the people must pay the bill. If, as has been proposed, in order partially to overcome this difficulty, the notes are never paid out except in

exchange for standard coin, their utility as a means of expanding the currency is destroyed, the quantity of notes put into circulation being exactly equal to the amount of coin withdrawn.

It has been claimed that the expense of a coin reserve is more than offset by the profit accruing to the government from the payment of a portion of its obligations by means of non-interest-bearing notes only partially covered by the reserve. This seems to be the case when we consider simply the beginning of the history of the notes. If the reserve amounts to but one-third of the issues, there is obviously at the beginning a clear profit amounting to two-thirds of their face value. Suppose, however, that the redemption of the entire issue should be demanded three times in the course of a year. The original reserve would be exhausted when one-third of the notes had been redeemed once, and must be replenished from one of three sources: either from money coming into the treasury through the channels of its ordinary receipts, from the product of a special tax, or from the sale of bonds. The first source obviously cannot be relied upon. It is rarely practicable for the government to exact standard coin for all payments due to it, especially when it is trying to circulate its own notes. It would be the merest chance, therefore, if the requisite amount of standard coin were paid in by the government's creditors. But certainty on this point would not remove all difficulties, since the coin paid in might be required for ordinary expenses, in which case it would not be available as a redemption fund. Even the adoption of the policy of surplus financiering would not insure the existence of a coin surplus just at the times when redemption of notes might be demanded. The levy of a special tax for the replenishment of an exhausted reserve

is quite out of the question. The machinery of taxation is necessarily slow in its operation, and cannot be relied upon to furnish funds for sudden exigencies, such as the one we are considering.

The sale of bonds in such an emergency seems, therefore, to be necessary, and this involves the payment of an annual interest charge which may much more than counterbalance the profit accruing from the original issue of the notes. If, according to our assumption, redemption three times in the course of a year were demanded, and bonds payable one year or more after date were issued to procure the necessary coin, in the course of a year the face value of the bonds outstanding would be three times as great as that of the notes, and the expense incurred by the government would be treble the ordinary rate of interest on the face value of the notes.

If we assume with the advocates of this form of currency, that redemption in large quantities is an unusual and rare occurrence, and consequently that the expense involved in the issue of bonds for the replenishment of the reserve is not often incurred, we must still remember that danger from this source is always imminent, and hence that such notes at the best always introduce an element of uncertainty into the finances of the government. Whenever for any reason the reserve falls below its ordinary limit, the ability of the government to maintain specie payments is placed in question. No one knows what the Secretary of the Treasury may do or what action Congress may take. A "panicky" feeling is, therefore, liable to be produced, which is certain to affect the value of all sorts of negotiable securities, to render business unstable, and, if other disturbing circumstances concur, to produce a commercial crisis.

Our own experience with these notes illustrates the objections which have been mentioned, and furnishes the best argument against their use. Though the amount of the gold reserve was not fixed by law, it early became customary to keep on hand at least a hundred millions of dollars. Between 1879, the date of the resumption of specie payments, and 1890 the Secretaries of the Treasury were aided in the maintenance of this reserve by an annual surplus of revenues over receipts and by a constantly increasing demand for currency, occasioned in part by our rapidly expanding commerce and in part by a decrease in the circulation of bank-notes. In spite of these favouring circumstances, however, in 1885 and 1886* the reserve fell to near the danger point and occasioned anxiety. In 1890 occurred two events which soon disclosed the danger to which Congress had subjected the treasury and the country when it assumed the obligation to maintain a currency of convertible treasury notes. One was the passage of the Sherman act, to which reference has already been made, and the other was the discontinuance of the policy of surplus financiering occasioned by the passage of the so-called McKinley bill. The former act added in three years $150,000,000 of new notes to the $346,000,000 of greenbacks, thus dangerously increasing the burden placed upon the gold reserve, and the latter soon substituted an annual deficit for the former surplus. The gold reserve showed the effect of the changed conditions. It fell in 1892 to $114,000,000, in October, 1893, to $81,551,385, and in 1894 to $68,000,000.† The "panicky" conditions thus produced, combined with various other circumstances, brought on a crisis in 1893, which was accompanied by a large foreign

* Taussig's "Silver Situation."

† Noyes's "Thirty Years of American Finance."

demand for gold. The result was the establishment of the so-called "endless chain," which revealed in the most complete fashion the true nature of our currency of treasury notes. The gold reserve was first reduced far below the $100,000,000 limit by the redemption of notes. The treasurer was, then, compelled to sell gold bonds in order to replenish it, and the redeemed notes were put again into circulation in the usual manner. This process was four times repeated, and it was discovered that, in some instances at least, the very firms who had purchased bonds and thus transferred gold to the Government withdrew it very soon thereafter by presenting notes for redemption. In all, bonds to the amount of nearly $300,000,000 were issued, and the endless chain* was finally broken by a contract with a syndicate of foreign bankers by which they agreed to supply gold to the treasury in the payment of bonds sold them at profitable rates, and to prevent, so far as possible, the presentation of notes for redemption. The danger of a repetition of this humiliating and expensive experience was partially removed in 1900 by an act which fixed the minimum gold reserve at $150,000,000 and took from the Secretary of the Treasury the power to reissue redeemed notes except in return for gold coin. As has already been remarked, the efficiency of a regulation of this sort depends upon the extent to which it transforms the notes into ordinary gold certificates, and its necessity accordingly is a proof of the practical impossibility of maintaining a currency of this sort without endangering the safety of our financial institutions and the credit of the government.

A comparison between these notes and subsidiary

* The endless chain was only temporarily broken at this time, see Noyes.

coin may be instructive. They are alike in having an intrinsic value less than their face value, and in being maintained at par in the circulation by redemption on demand in gold. They are unlike, however, in the fact that the intrinsic value of subsidiary coin is considerable, while that of government notes is practically *nil*, and in the fact that the former are not likely to be presented for redemption, while the temptation is very great to secure the redemption of the latter whenever gold is greatly needed. These differences are a sufficient explanation of the reason why subsidiary coinage is safe and treasury notes dangerous. In the case of the former the government assumes a risk equal only to the difference between their intrinsic and their face value, while in the case of the latter the government has no security whatever for the risk assumed. Nothing can take the place of subsidiary coins in the circulation, and consequently the demand for small change may be relied upon to keep them in circulation, provided the quantity issued is not excessive, while bank-notes, silver and gold certificates, and gold and silver coin can easily be made to fill the place of treasury notes in the circulating medium, and their presentation for redemption is facilitated by the fact that in no other way can gold coin for exportation or any other purpose be so easily and cheaply obtained.

The conclusion to which we are forced by the considerations presented in this chapter is that no form of paper currency based entirely or largely upon government credit is to be recommended. Subsidiary coins of relatively high intrinsic value and gold or silver certificates represented dollar for dollar by gold and silver coin do not belong under this head and, consequently, may without danger be made permanent elements of a currency system. Inconvertible government notes, however, or convertible

notes based upon a partial reserve are dangerous, the former in a degree which renders their use a national calamity, and the latter to such an extent that the nation which employs them may confidently expect occasions when its treasury will be embarrassed, if not humiliated, by them and its credit system seriously disturbed and perhaps thrown into the paroxysms of a commercial crisis.

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Inconvertible government notes are condemned by all political economists, but the objections to them are not always identical with those given in the text. The following discussions are valuable: Walker's *Money*, chs. xiv–xvii, and *Money, Trade, and Industry*, chs. viii and ix; White's *Money and Banking*, pp. 117–235; Mill's *Political Economy*, bk. III, ch. xiii; Wagner's *Die russische Papierwährung*, chs. i–vii; and Hertzka's *Währung und Handel.*

On the history of our own experience with this sort of currency see Knox's *United States Notes*, chs. i, ii, iii, and ix; Linderman's *Money and Legal Tender in the United States;* Sumner's *History of American Currency*, ch. i; Davis's *Currency and Banking in the Province of the Massachusetts Bay;* and *Report of the Comptroller of the Currency for 1879.* On our experience with silver certificates see Taussig's *Silver Situation in the United States;* Noyes's *Thirty Years of American Finance*, ch. iv; and Knox, ch. x. The history of our greenbacks and treasury notes is admirably presented by Noyes; see also Knox, chs. ix and xi, and Professor Laughlin's *Report of the Indianapolis Convention*, pt. III.

On French experience see White's *Paper Money Inflation in France;* Courtois's *Histoire des Banques en France;* Vuhrer's *Histoire de la Dette Publique en France*, v. I, chs. xiii and xiv.

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CHAPTER VII.

BANK CURRENCY, ITS NATURE, OPERATION, AND ADVANTAGES.

THE major part of the paper money of the present day is supplied by institutions called banks. In order to understand this sort of currency, therefore, it is necessary to explain the nature and methods of operation of these institutions.

1. The origin and development of banking institutions.— First of all we must note the fact that these institutions have changed very much in character since their origin, and consequently nowadays perform many functions unknown to those of former times. The first banks seem to have arisen in connection with the business of exchanging money. In ancient times and especially in the Middle Ages the varieties of coins were greater even than at the present day, and they were much less perfectly and honestly minted. Specialists were, therefore, required to determine their exact value and equivalence and to exchange coins of one mintage for those of another, and their services were in great demand at fairs and other places where merchants of different nations met for purposes of trade. Inasmuch as they kept their boxes or chests of coins on benches or "banken," the name *bankers* came to be applied to them. On account of their technical knowledge and the fact that they were obliged constantly to keep on hand considerable quantities of the precious metals, this business in the early Middle Ages was usually carried on by goldsmiths, but

later it was sometimes assumed by the governments of large commercial cities, as, for example, by Amsterdam in 1609, by Hamburg in 1619, and by Nürnberg in 1621. Of these latter the Bank of Amsterdam was the most important and may be regarded as typical of these early institutions.

In the early seventeenth century the city of Amsterdam was the centre of the international trade of Europe, and accordingly the coins of all nations were there in circulation. These were of so many varieties and forms and of such different degrees of reliability, and some of them were so worn and defaced by long usage and the practice of clipping, that merchants found it difficult to keep themselves informed regarding their true worth, and were exposed to the danger of great loss if they accepted them at their face value. The city, therefore, established a bank to which merchants took their coins, receiving therefor credit to the amount of the value of the metal they contained. Payments were then made by transferring credit on the bank's books from one person to another. That is to say, a person who owed a sum of money to another accompanied him to the bank and ordered the amount transferred from his own account to that of his creditor. Bank money, as these book-accounts or the written orders to transfer them were called, thus acquired a premium over the debased and mutilated coins in circulation, and for generations constituted the basis of all the foreign exchanges of the city. It was the means of substituting order for the financial chaos which reigned previously, and contributed greatly to the prosperity of Dutch commerce.

On account of the fact that these early bankers were obliged to provide themselves with strong boxes and other facilities for protection against robbers, fire,

etc., it became customary for other persons to entrust to them their money and other valuables for safe-keeping, and after a time this feature of their business became quite as important as money-changing and ultimately more so. A third function was assumed when bankers acquired the habit of loaning at interest the funds left with them for safe-keeping. This was made possible by the fact that their receipts, which were supposed to represent actual cash on deposit in their strong boxes, and which were redeemable on demand, were quite as readily accepted in payments as coin and thus circulated from hand to hand as money. Considerable quantities of coin thus remained with the bankers for long periods of time without being called for, and they finally acquired the habit of loaning it out at interest for short periods of time, keeping on hand only a quantity sufficient to meet current demands.

From the earliest times also, bankers have been the chief agents through which foreign exchanges have been conducted. As dealers in coin and bullion they had international connections and a knowledge of international affairs not possessed by other merchants, and were, therefore, in a position to undertake the settlement of international accounts by means of orders drawn on bankers in other countries or other cities with whom they had regular business transactions. As keepers of other people's money they also promoted saving, and banks thus became in time the chief savings institutions of the country.

The relative importance of these various functions has changed considerably with the development of industry and commerce, and a differentiation has taken place between institutions, some specializing in one direction and others in another. For example, at the present

time money-changing has become relatively unimportant, and is carried on only by a few banks situated in those places where travellers from one country to another need to exchange coins, and often by establishments not nowadays regarded as banks in the proper sense of that term. Some institutions emphasize the promotion and facilitation of saving almost exclusively, and are hence called Savings Banks. Others provide special facilities for the safekeeping of securities of all sorts, and are therefore called Safe Deposit Companies. Some banks specialize in the conduct of foreign exchanges, and others do almost exclusively a domestic business. According to the methods by which they conduct their affairs, some are known as banks of issue and others as banks of deposit. In this book we are chiefly concerned with the relations of banks to the currency, and shall, therefore, describe in detail only those features of the business which are essential to an understanding of such relations.

2. The nature and classification of deposits.—The keeping of deposits is one of the chief functions of banks at the present time and is directly connected with the currency function. Two classes of deposits, however, must be distinguished.

A. *Deposits of securities.*—The growth of so-called stock companies and the development of the credit system has brought into existence a great variety of securities the safe-keeping of which is a matter of prime importance. It rarely happens that the owners of these securities possess the same facilities for their safe-keeping as do banks whose business by its very nature compels them to provide large, strong, fire-proof safes, night-watchmen, and every other means for protection against robbers, fire, damp, and dust. That enormous quantities of these securities should, therefore, be entrusted to the

safe-keeping of banks is natural, and that special institutions for the performance of this function should have developed in large business centres is not surprising. Where deposits of this sort are large, special safes and strong rooms are provided, equipped with boxes for each depositor. Sometimes each individual has a key and ready access to his own strong box, and sometimes he secures his valuables only through the mediation of the bank's officials. In every case the securities deposited are kept by themselves, and are returned to the depositor upon demand, the bank merely acting as his agent and in no case acquiring the right of ownership in the paper itself.

B. *Deposits of money.*—The most important form of deposits is that of money. People of all classes deposit with banks the greater part of the money which comes into their hands. Ordinarily one keeps on hand no more than is necessary to make small purchases or to transact current business. Merchants usually make a deposit every day of the cash received, keeping in their tills only a relatively small sum for the purpose of making change, while people with salaries and wage-earners deposit their funds monthly or weekly as they are received, unless they need to pay them out immediately in the making of purchases or in the settlement of accounts, in which cases the money is simply transferred to other people, who deposit it in the banks to their own accounts. It may be said, therefore, without exaggeration that the greater part of the money of a country sooner or later is deposited in the banks, and used as the basis of banking operations.

The universality of this practice is partly explained by the fact that money is safer in banks than elsewhere. If each one were obliged to keep his own funds, robbery

would become a profitable business, and the problem of police protection in every large city would be much more complicated than at the present time. It is also an economical practice. If deposits are allowed to remain a considerable time, a small rate of interest is usually paid, and besides a heavy bill for expense of safes, watchmen, private detectives, and criminal prosecutions is thus saved. The item of safety alone was formerly considered so important that depositors were willing to pay to the banks a considerable fee for the service of keeping their funds, and probably many people would still find it profitable so to do, were it necessary. As we shall soon see, bankers are now able to make such profitable use of the funds left with them that they can afford to abolish all fees, and in certain cases invite deposits by the payment of a small rate of interest.

A very important distinction must be noted between this class of deposits and that of securities. When money is left with a bank it ceases at once to be the property of the depositor and passes into the ownership of the bank. The depositor is credited with the amount on the bank's books, and thereby acquires the right to demand legal-tender money either at any time he may desire or after the lapse of a specified number of days, weeks, or months, but he has no right to demand the identical coins, checks, and notes which he deposited, unless a special agreement to this effect is made. The right of the bank to use the money as its own private property, subject, of course, to the regulations imposed upon the conduct of this branch of business, is recognized by the laws of all the great nations and is characteristic of modern as distinguished from earlier institutions. Until comparatively recent times deposits of money were exactly like deposits of securities at the present day. It

still remained the property of the depositors, and banks were expected to keep it constantly on hand subject to their orders. When bankers first began to loan at interest the funds entrusted to them for safe-keeping, they were really violating a trust and were punished when they were discovered. The old Bank of Amsterdam secretly indulged in this illegal practice for years, and, when it was finally discovered, lost its right to do business. The present legal position enjoyed by banks is the result of an understanding of the nature of their business by statesmen and legislators and of an appreciation of its importance. At the same time the acquisition of the privilege of using deposits for purposes of private profit, on the one hand, has rendered necessary the safeguarding of the banking business by legislation, and, on the other, has made possible the development of new methods.

According as the depositor acquires the right to demand legal-tender money from the bank whenever he may desire, or only after the lapse of a specified period of time, deposits are usually classified as *current accounts* and *time deposits*. This distinction is chiefly important on account of the fact that the use to which the bank is able to put the funds left with it is apt to be different according as they belong to the one class of deposits or the other. Current accounts consist of the capital of the community which is "turned over" frequently, as, for example, the funds used in the purchases of the goods of retailers, those required for the periodical payments of wages and salaries, the purchases of materials used in manufacturing, the payment of current household expenses, etc., etc. While they are subject to the call of depositors, they usually remain with the bank for several days and sometimes for longer periods of time, and a

percentage of them remains permanently, many people making it a practice always to keep a fair balance at the bank, and thus never completely exhausting their accounts. Time deposits consist chiefly of savings on their way to more or less permanent investments. Most people accumulate their savings little by little, leaving with the banks their surplus earnings or receipts until the amount accumulated is sufficient to purchase some sort of security or securities which will yield them a higher rate of interest than the banks pay or enable them to share in the earnings of some branch of industry. There are very few forms of permanent and profitable investment in which small sums can be used. Capital which is being transferred from one form of investment to another usually takes the form of time deposits during the interval between the leaving of the one form and the passage into the other, unless that interval is very short, in which case it swells current accounts. From the standpoint of the bank, therefore, the chief distinction between current accounts and time deposits consists in the fact that in case of the former the length of time during which it may safely invest them is shorter and less certain than in that of the latter.

3. The investment of deposits. — The great development of the credit system in modern times accounts for the ability of banks to make profitable use of deposits left with them even for very short periods of time, and explains the chief forms of their investment. The credit system is the result of the practice of buying and selling on time instead of for cash. It rarely happens nowadays that merchants and manufacturers or buyers and sellers of any class of goods or securities receive all the payments due them before the goods leave their hands or pay spot cash for everything they buy. Instead they buy on

time and sell on time. This practice is rendered necessary by the wide separation of producers and consumers and the rapidity of action demanded by modern business methods. Goods must often be sent across a continent or over the ocean in order to reach their destination, and a considerable length of time must, therefore, elapse between the date of the purchase and that of the arrival of the goods. To this must be added the time needed to sell the goods to their ultimate consumers, if we are to make a proper estimate of the entire amount of time which must elapse before a mercantile transaction can be completed. It is customary to bridge over this period by granting credit to the purchaser, thus enabling him to realize upon the goods bought before he needs to pay. It is frequently necessary that goods should be ordered by telegraph or telephone and despatched immediately without waiting for the arrangement of all details and the settlement of accounts. Indeed, whenever the parties to commercial transactions live in different towns, or find it impossible or inconvenient to meet face to face, the transfer of cash directly from the hands of the buyer to those of the seller is an impossibility, and the granting of credit becomes, therefore, a necessity.

The length of time during which credit is granted varies from a few days to several months according to the nature of the transaction and the financial condition and relations of the parties. As a rule, it is short, ten, thirty, sixty, and ninety days being most common.

This practice of granting credit results in the creation every day of an enormous mass of promissory notes and other documents, which constitute the security given by buyers to sellers or by borrowers to lenders, or record the credit transactions in a legal and convenient form. It is these securities which present to the banks the op-

portunity to make profitable use of their deposits. The owners of this paper usually need the funds due them before the maturity of the notes, and bankers are in a position to supply them. The process by which this mutual accommodation is accomplished is usually called "discounting." That is, the bankers buy the notes at a price equal to their value at maturity minus interest from the date of their purchase. Since this period is usually short, but of different degrees of length in the cases of the different classes of notes, bankers are usually able to so arrange their investments as to secure the return of their funds in time to meet the demands of their depositors. Current accounts must, of course, be invested in paper which matures in a short period, while time deposits may be used in the purchase of paper maturing at longer intervals.

4. The loan of the bank's credit.—The most striking feature of modern banking, however, is not the profitable use of deposits in the manner just indicated, but the loan of the credit of banks, which makes possible the universal practice of discounting securities greatly in excess of all the money which in any form or through any channel comes into their possession. The origin of this feature of the banking business is traceable to the two practices already alluded to in the case of the goldsmiths and the old Bank of Amsterdam, by which the former were able to secure the circulation of their receipts as money, and the latter made common in Amsterdam the practice of making payments by means of the transfer of credit on its books from one customer to another. The only essential difference between the practices of these early bankers and those of the present day consists in the fact that the receipts of the goldsmiths and the credit accounts of the customers of the Amsterdam Bank were

based upon deposits of actual cash, while modern bank-notes and credit balances often have their origin in discounts. When the customer of a bank brings the notes of his creditors or his own paper to the bank for discount he frequently accepts as a consideration either the notes of the bank or a credit balance on the bank's books transferable to any other person upon his order. In either case he enjoys the advantage of the immediate use of his funds, and in a form for many purposes more convenient, economical, and safe than coins, while the bank has been able to loan at interest its own credit. In order to make this clear we will illustrate the processes of issuing notes and transferring book credits.

A bank-note is simply the written promise of the bank to pay to the bearer on demand the sum indicated by the figures or statements on its face. Provided it is actually redeemable on demand in standard money, and that fact is generally known in the community, and the notes are issued in convenient denominations, they will circulate as money and for many purposes be preferred to coin. In reality, however, they are simply representatives of the bank's credit, unredeemed promises to pay which may have originated in a transaction of pure credit. Suppose a merchant has immediate need for one thousand dollars which he does not possess, and goes to his banker for a loan. On the assumption that his credit is good, the banker will probably accommodate him, and possibly in the following manner: He will draw a promissory note in his own favour for one thousand dollars due three months from date with interest at six per cent, and the merchant will sign it, thus legally assuming the obligation therein expressed. The banker will then hand over to him the notes of his bank to the face value of one thousand dollars, and the merchant will use them in the

purchase of goods, the payment of wages or salaries, or in the meeting of any other financial obligation he may chance to have. In reality the transaction has consisted in the exchange of the bank's credit for that of the merchant, and in the use of the former as money, the consideration being the interest which the merchant agrees to pay at the expiration of three months' time.

The other method of lending and employing bank credit as money may be illustrated as follows: Suppose five customers of a bank, whom we shall call A, B, C, D, and E, each having commercial transactions with the other, have their notes discounted each to the amount of one hundred dollars and receive in compensation credit balances at the bank, each to that amount. A then buys a bill of goods of B valued at one hundred dollars, but, instead of paying him in coin or government notes, gives him an order on the bank. This order may be simply a verbal command to transfer A's balance to B's credit, or it may be a written order to that effect. In either case A's balance at the bank is reduced to zero and B's increased to two hundred dollars. B now contracts an obligation in favour of C to the amount of one hundred dollars and pays him in like manner, thus reducing his balance to the old figure and raising C's to two hundred dollars. Next in order C makes a hundred-dollar purchase of D, D of E, and E of A, each paying by a transfer of credit on the bank's books in favour of his creditors. The result is that at the end of the five transactions each man has a balance of one hundred dollars at the bank, and is thus in a condition to repeat the commercial process just described, and business to the amount of five hundred dollars has been transacted without the use of coin or government notes. In this case, as in the preceding, the origin of the process was a loan

from the bank, and the medium of exchange was the bank's credit, the only essential difference between the two cases being the form in which that credit was used.

5. The technical meaning of the terms discount, deposit, and banking.—In modern practice the distinction between the investment of deposits and the lending of the bank's credit is not drawn. The term *deposits* is applied indifferently to credit balances originating in deposits of money or to those having their origin in the discounting of notes, and may, therefore, be defined as the aggregate amounts standing to the credit of customers on the bank's books. This is the meaning of the term as used in bank accounts, and it must not, therefore, be assumed that a bank has actually received money to the amount represented by the figures standing opposite the word *deposits*. The term *discounts* has also acquired a technical meaning, and is applied to the aggregate of the mercantile securities maturing in short periods of time owned by the bank, as well as to the mathematical process described under that head in our arithmetics. Indeed, the terms *discounts* and *loans* are used synonymously in bank parlance, and are employed indifferently in their accounts to designate the securities above mentioned.

The terms *discount* and *deposit* may also be considered as generally descriptive of the processes which are technically called banking. Whatever other functions an institution may perform, the discounting of mercantile securities and the keeping of book-accounts with customers, to be used in the manner above indicated, are necessary to constitute it a bank in the modern sense of that term. The issue of notes is a process of essentially the same nature as the keeping of book-accounts, and may or may not be connected with it. The keeping

of savings, though to a certain extent necessarily involved in the other functions, need not be a special branch of the business, and the safe-keeping of securities may be entirely omitted or reduced to a minimum. The performance of other functions, such as the conduct of foreign exchanges, the purchase and sale of bullion, the exchange of coins, the making of loans on special classes of securities, like stocks or bonds or farm mortgages, may or may not be added, and their presence or absence usually depends upon the peculiar needs of the locality in which the bank is located. Essentially, then, a bank is an institution which trades its own credit for money and interest-bearing securities, and the explanation and reason for its existence must be sought in the mutual advantages of this trade.

6. The advantages of bank currency.—Besides being able to transform their notes and bills of exchange into funds immediately available for purposes of commerce, business men derive great advantage from the superior convenience, safety, and elasticity of bank currency. This is due, in the first place, to the fact that this currency exists in a variety of forms, each adapted to definite commercial needs. The check, for example, is a very convenient and safe means of making large payments. It takes less time to write into the printed forms, now furnished by all banks, the name of your creditor, the amount to be paid him, the date, and your own signature, than to count out a large number of notes or coins, and in this way the danger of loss from mistakes in counting is also avoided. Your creditor finds the check more convenient and safe than coin or notes, because it is less bulky, and, if he chances to lose it, he can procure a duplicate and direct the bank not to honour the original if it is ever presented for payment. Furthermore the stub

of a check-book constitutes a convenient record of expenditures. For payments at a distance, as in another town or country, banks furnish a convenient currency in the form of drafts, that is, orders of one bank upon another to pay to the person named or to his order a specified sum. These can be conveniently and cheaply sent by mail, and, if lost, like checks, can be duplicated. For travellers in foreign countries banks furnish so-called letters of credit for any amount needed. These enable the holder to obtain at any place of commercial importance any sum he may desire in the money of the country in which he is travelling. These, too, can be duplicated if lost. Bank-notes, which may be issued in any and all denominations, can be used in all ordinary commercial transactions; they are more convenient than coin for all purposes except small change, and are quite as convenient as government notes, being in all external respects identical with them.

By the elasticity of bank currency is meant its capacity to adapt itself, as it were automatically, to the varying needs of commerce. We have just learned that banks are able to supply the various forms of currency needed, and it only remains to show that they can also supply these in the amounts, at the times, and in the places required. The amount of bank currency depends primarily upon the needs and desires of the customers of banks, among whom nowadays are to be found all business men and large numbers of people otherwise engaged or living without labour. As we have already shown, it is created by the processes of discount and deposit, and enters into circulation when the customers of banks pay out the notes received or make use of their credit balances by transferring them to others by means of checks. So long, therefore, as banks are able to con-

tinue discounting the paper of their customers the amount of bank currency can be increased, and, assuming that banks exist in sufficient numbers in all places where business is carried on, this currency will come into circulation in the places where it is in demand and at times when it is needed. Any business man can get the amount of money he needs, at the times and in the exact form that he needs it, provided his banker will discount his notes. The only limit to the increase of bank currency, therefore, is the capacity of banks to discount mercantile securities, and within that limit its increase is in direct response to business needs.

Besides the capacity to increase at the right time and place, an elastic currency must possess the capacity to decrease when the need for it has passed away. This quality also bank money possesses in a high degree. Credit balances, which by means of checks are made to serve the purposes of a medium of exchange, diminish in magnitude when discounted notes fall due and are not renewed, customers meeting their obligations to the bank by checking against their accounts or by transferring to it the ownership of cash which has been on deposit elsewhere. Suppose, for example, that a merchant has for three months been using a credit balance obtained by the discount of his own notes. The date of their maturity having arrived, he must pay them. In case he no longer needs the use of the bank's credit, he will do this by drawing a check against his account in favour of the bank, having previously made preparation for this by allowing a sufficiently large balance to accumulate. In case, however, he still needs more money than he possesses, he will probably meet the matured note by discounting a new one or by securing the renewal of the old one. It would, of course, be possible for him to accumulate cash

in his own tills to an amount sufficient to pay his notes, but in that case the money would probably have been taken from banks by checks drawn against the accounts of his customers. The almost universal custom of depositing each day the money received, however, prevents the general adoption of this method of payment. It is thus evident that a decrease in the need for money in any community will result in the decrease of bank balances by the payment of matured discounts, no business man being willing to continue the payment of interest to a bank for the use of funds which he no longer needs.

The process by which bank-notes are withdrawn from circulation, when they are no longer needed, is similar to the one just indicated. Like other forms of money, they are deposited in the banks, and cannot again be circulated until some one of the bank's customers is willing to take them in satisfaction of the whole or a part of his credit balance, or as a loan against a discounted note. In the former case they are substituted for another form of bank money, and in the latter they constitute a real addition to the currency. When, therefore, they are transferred to the bank in final payment of discounted notes, they effect as real a diminution of the volume of the currency as the final extinguishment of an equivalent amount of credit balances, and when they accumulate in the tills of the banks they are ultimately redeemed and destroyed.

In view of the great advantages of bank currency, it is not surprising that its circulation has increased with the growth of commerce and industry. But why are banks willing to furnish it? What is the inducement? Like other commercial institutions, they are working for profit, and under ordinary circumstances will pursue that line of policy which will swell this to the greatest

extent. The public benefits which flow from this line of business are, as a rule, purely incidental, so far as the proprietors of banks are concerned. While banks have occasionally been founded by States almost entirely on account of their public utility, as a rule they are the outcome of commercial motives pure and simple, and can only be understood when they are viewed in the light of this fact. It follows, therefore, that bank proprietors, as well as their customers, must derive benefit from the business if it is to be continued. In their case this benefit comes chiefly in the form of the interest derived from their securities, which, as we have seen, represent in part money left with them on deposit and in part the loan of their own credit. Fees are charged in the case of certain services, but these are often little, if any, in excess of the expenses involved. It must be expected, therefore, that banks will aim to expand their loans to the greatest extent that sound business methods will permit, and that they will charge as high a rate of interest as possible under the existing conditions of the market. This fact has several important consequences which must be considered in succeeding chapters. One is the necessity of safeguards to prevent unscrupulous bankers or those of unsound judgment from expanding their credit beyond the limits of safety, and another is that the rate of discount becomes the result and at the same time an index of commercial conditions.

REFERENCES.

Most of the topics discussed in this and the four following chapters are treated in the following standard works on banking: Macleod's *Theory and Practice of Banking;* Gilbart's *History and Principles of Banking;* Hankey's *Principles of Banking;* Dunbar's *History and Theory of Banking;* Wagner's *Beiträge zur Lehre von den Banken,* and *Der Kredit und das Bankwesen;* Scharling's

Bankpolitik; Courcelle-Seneuil's *Traite Théoretique et Pratique des Opérations de Banque;* and Wolowski's *La Question des Banques.*

On the origin and development of banking institutions see especially Macleod, v. I, ch. iv, sec. 1; Bagehot's *Lombard Street,* ch. iii; Gilbart, v. I, chs. i and ii; and Jäger's *Die älteste Banken und der Ursprung des Wechsels.* On the details of the various banking operations see Macleod, v. I, chs. vi and vii, and v. II, ch. xvii, secs. 12–19; Gilbart, v. I, chs. xv and xx; Wagner's *Lehre,* chs. ii and iii, and his *Kredit,* ch. ii; Scharling, ch. i, sec. 1, and ch. ii, sec. 2; Courcelle-Seneuil, bks. II and III.

On the advantages of bank currency see Steiglitz's *Das Wesen und die Vorzüge des Despositen- und Checkverkehrs.*

CHAPTER VIII.

THE FORMS OF BANK CURRENCY AND THE LIMITS OF ITS ISSUE.

THE characteristic features of the various forms of bank currency mentioned in the preceding chapter will now be described, in order that the methods of the regulation of each and the limits of its circulation may be better understood.

1. **Checks.**—A check may be defined as the written or printed order of a depositor to have a portion or the whole of his credit balance transferred to another person. It is addressed to the bank, and contains the date of the order, the amount to be transferred, usually expressed both in figures and in letters, the name of the person in whose favour and to whose order the transfer is to be made, the signature of the depositor or drawer, and usually a number corresponding to one written on the stub or portion of the check retained by the drawer and containing a record of all the essential features of the transaction. Forms are furnished by banks on which is printed everything except the date, amount, names of drawee and drawer, and the number, spaces being left in which these items are to be entered by the drawer. The following is typical of the usual form:—

FIRST NATIONAL BANK OF PITTSBURG.

$1000^{00} PITTSBURG, Pa., June 25, 1902.

Pay to the order of John Doe

One Thousand Dollars.

(125) RICHARD ROE.

Being simply an order to pay, the check is not binding upon the bank to which it is addressed until it has been presented and accepted. The latter process may be accomplished by writing or printing the word *Accepted* across the face of the check over the signature of a duly authorized officer of the bank. It then becomes an obligation of the bank in some respects similar to a bank-note. A bank is bound either to accept or to pay a check drawn by a depositor whose credit balance is equal to the amount ordered paid. Before acceptance a check represents simply the credit of the drawer. Inasmuch, however, as people are not in the habit of drawing checks unless they have balances in their favour or credit at the bank, the check of a person of integrity and recognized financial soundness will ordinarily be accepted, and, by the process of endorsement, may pass through many hands before it reaches the bank. This process consists in writing the drawee's name across the back of the check over the phrase "Pay to the order of," followed by the name of the person to whom it is desired that it shall be paid. This person then becomes the payee, and by the same process may order the check paid to another person. Instead of being made payable to the order of the drawee, checks are sometimes drawn payable to bearer, in which case they read "Pay to John Doe or bearer," instead of "Pay to the order of John Doe" or "Pay to John Doe or order." They are then transferable without endorsement, and the bank is authorized to pay the amount named therein to whoever presents them. A check payable to order is not honoured by a bank until it has been endorsed by the payee. A check may be honoured either by being paid in legal-tender money or bank-notes, or by placing the amount named to the credit of the payee. In either of

these cases it is withdrawn from circulation, and, after the proper entries have been made in the bank's books, it is usually returned to the drawer.

On account of its peculiarities the life of a check is usually short and the area of its circulation confined to the immediate locality of the bank upon which it is drawn and to the people who have bank accounts or at least have easy access to banks and are familiar with their methods. Occasionally checks are sent long distances by mail, and return to the drawer covered with endorsements, indicating that they have been the means of making many payments; but this must be regarded as exceptional, other forms of bank currency being more commonly used for payments at a distance. Even in these cases, however, the length of time between the drawing of a check and its disappearance from circulation is very short as compared with the life of a bank-note. Within the area of their circulation checks are very extensively used, constituting in fact the chief medium of exchange. Statistical investigations have several times been made for the purpose of measuring the extent of their use, and, while such investigations are necessarily imperfect and have rarely distinguished between checks in the limited sense in which we are using the term and some other forms of bank currency, they prove beyond the possibility of doubt that in commercial centres, especially those in which wholesale trade and business on a large scale are dominant, checks are more extensively used than all other forms of currency combined. This is explained by their superior convenience, economy, and safety in large payments, and by the easy access to and familiarity with banks possessed by business men in large cities. For retail centres, small towns, and country districts this form of currency is not so well adapted, although its use here

is growing. It is also noteworthy that nowhere on the continent of Europe are checks so extensively used as in the United States and England. This fact must not be regarded, however, as indicative of any essential difference in the monetary needs of these two groups of countries, but rather as evidence of the less rapid and complete development of the banking business on the continent of Europe, due in part to conservatism and in part to the obstacles there placed in the way of the free development of these institutions. Even there, however, a rapid increase in the use of checks is observable, and already this form of currency occupies an important place in the exchanges of every large city.

2. **Drafts.**—A draft may be defined as a bank's check. In most essentials it resembles an ordinary check, differing from it chiefly in the fact that it is an obligation of a bank instead of a depositor and is consequently signed by some bank official. It is, in fact, a special form of check adapted for use in making payments at a distance. Every bank provides itself with so-called correspondents in the chief commercial centres of the regions in which its customers are liable to do business, upon which by special arrangement it is permitted to draw drafts which said correspondents agree to honour. A depositor, therefore, who wishes to make a payment outside of his own city or of the region in which his own check will circulate may draw a check in favour of his bank and receive in return a draft on a bank in the place in which his creditor resides or on one whose paper will be readily honoured in that place. Said draft may be made payable to the order of the depositor's creditor or to his own order, in which latter case it will be made payable to the creditor by endorsement in the ordinary form. Drafts are carefully numbered, and all their essential features recorded

on stubs kept by the issuing bank. When drawn on foreign correspondents they are usually issued in duplicate, one, called the first of exchange, being given to the purchaser for transmission to his creditor, and the other, called the second of exchange, being sent directly to the bank upon which it is drawn. The duplicate serves as a means of identification of the original, and as a substitute for it in case it is lost. The payment of either of the bills renders the other invalid. When a draft is paid, the amount is debited on the account of the issuing bank and the draft returned to the drawer. By endorsement a draft may pass through many hands and thus be the means of effecting several exchanges before it is finally presented for payment. The obligation of the bank upon which it is drawn to pay it, however, is not established until the original or its duplicate has been presented and accepted.

The superior convenience and economy of drafts over coin or any other form of currency which must be sent by freight or express at the risk and expense of the sender has given them wide circulation in international and intermunicipal transactions. At the present day they are obliged to compete with similar forms of currency issued by express companies and postal authorities, but they must still be regarded as the chief medium for this class of exchanges. Their use has led to the establishment of such close and intimate relations between the banks of the world as to constitute them a veritable organism, sensitive in a high degree to all kinds of commercial influences and of no small significance in the political life of the modern world.

It must be carefully noted that drafts, like ordinary checks, are based upon deposits, and are, therefore, a means of expanding discounts. They may be purchased

either with a check against an already existing credit-balance or by means of the deposit of cash. In either case they make it possible for the bank either to purchase new securities or to lengthen the period before maturity of the old ones. Indeed, from the standpoint of the bank, they may be regarded as a means of extending the circulation of deposits as money, and in this way of expanding the field for the profitable investment of bank-credit.

3. Circular letters of credit.—A still further extension of the check system is accomplished by the so-called *Letter of Credit.* As previously stated, it is intended for the use of travellers, especially in foreign countries. This document is in the form of a letter addressed by the issuing bank to a long list of similar institutions conveniently situated in the various foreign countries which are visited by travellers, and asking them to furnish the person or persons named therein money in sums as desired up to a certain amount, accepting as reimbursement therefor his or their check upon some specified correspondent of the issuing bank. Like checks and drafts, they are numbered and dated, and usually a date is specified after which the letter is not to be honoured. As a means of identification of the person or persons in whose favour it is issued and as a means of procuring a duplicate in case of loss, the letter of credit is often accompanied by a *Letter of Indication,* which is also dated and numbered, and contains the name of the payee and his signature, the number of the letter of credit, and the names and addresses of the banks which are asked to honour it. The following illustrates the usual form of such letters:—

THE EXCHANGE BANK OF PHILADELPHIA.

No. 11333. PHILADELPHIA, January 31, 1902.

Gentlemen:

This letter will be presented to you by Mr. John Doe, in whose favour we beg to open a credit with you collectively for the sum of One Hundred Pounds Sterling, to which extent be pleased to furnish payments in sums as required, inscribing the amounts so paid on the back of this letter. In reimbursement you will take his draft on the London City and Midland Bank, Limited, London, inserting therein the date and number of this credit, which we engage shall meet with due honour.

Your charges are to be paid by the bearer hereof.

Requesting for Mr. Doe your best attention, we have the honour to be, Gentlemen,

Your obedient servants,

£100. RICHARD ROE.

This credit is in force until December 31, 1902.

To Messieurs the Bankers named in our Letter of Indication No. A 3520.

Letter of Indication.

THE EXCHANGE BANK OF PHILADELPHIA.

No. A 3520. PHILADELPHIA, January 31, 1902.

To Messieurs the Bankers named in this Letter:

Gentlemen:

This letter will be handed to you by Mr. John Doe, who is furnished with a Circular Letter of Credit, No. 11333, issued by this bank.

Recommending Mr. Doe to your kind attention, and referring you to his signature below, I have the honour to be, Gentlemen,

Respectfully yours,

RICHARD ROE.

Signature of

John Doe.

On the inside of this letter are printed the names and addresses of the various banks, usually classified under the heads of countries and cities.

The entry of the sums paid on the back of the letter of credit enables each bank to whom it is presented to determine the amount still due, and thus prevents overdrawing, and the drafts, drawn by the payee and sent to the correspondent named in the letter and by him to the bank of issue, serve as a means of properly adjusting the accounts between the various banks concerned.

In their origin and relations to the banking business letters of credit present no peculiarities not already observed in the case of checks and drafts. They are a very convenient and economical invention which still further extends the use of deposits as money, and thus increases the opportunities for the investment of bank credit. In the three forms of checks, drafts, and letters of credit, deposits perform a very large proportion of the world's exchanges, and constitute at the present time the most elastic portion of the world's currency. Since the form of these documents may be easily modified and new ones invented as convenience and the changing needs of commerce demand, the persistence of this form of currency is assured, and a still further extension of its use may be expected.

4. Bank-notes.—A bank-note has already been defined as the promise of a bank to pay to bearer on demand a specified sum of money. It is usually printed, contains a statement of the amount both in letters and in figures, the signatures of the properly authorized officers of the bank, usually of the president and the secretary, the date of issue, and a number corresponding to the one on the stub. Frequently extracts from the law authorizing the issue and various devices intended to make the

note attractive or to render difficult its counterfeiting are added. The following form shows all the essentials:—

25 25

N C 1000 N C 1000

The Bank of the Netherlands
will pay to bearer
TWENTY-FIVE GULDEN.
Amsterdam, January 2, 1900.

The Secretary, The President,
JOHN DOE. RICHARD ROE.

25 25

In form bank-notes are distinguishable from checks by the fact that they are issued in fixed denominations, are payable to bearer, are a promise to pay instead of an order to pay, and are obligations of the banking institution itself instead of one of its depositors. The denominations are usually selected with a view to their convenience in exchange, and range from some low limit, frequently fixed by law, to the largest amounts needed in commercial transactions. Being payable to bearer and obligations of a bank, they are transferable without endorsement and are readily accepted wherever the bank's credit in this form is known to be good. If, as is usually the case nowadays, they are so well secured that loss from their acceptance is rendered practically impossible, they will circulate throughout the length and breadth of the country in which they are issued, and be accepted in the exchange-centres of foreign lands. Indeed, the peculiar form of bank-notes is designed to render them everywhere acceptable as money in ordinary commercial transactions. Like checks, however, they are payable on demand in legal-tender money, and may be deposited on account like any other form of currency. When once

paid or redeemed they may be destroyed or reserved for future use in a new issue.

The fact that well-secured bank-notes are capable of circulating wherever money is used makes them exceedingly efficient instruments for the expansion of bank credit. Being fitted for all branches of trade and acceptable in small towns and country districts as well as in large cities, they permit the extension of banking operations to all parts of a country and among all classes of people, and, since their presentation at the bank for acceptance or payment is not necessary to the establishment or maintenance of the bank's obligation to pay them, they are apt to remain for a long time in circulation before being sent in for redemption. It is possible, therefore, for a very large quantity of them to be put into circulation and kept there for a long time without the bank's ability to redeem them once being tested. When it is remembered that they may be issued against interest-bearing securities, the benefits of which accrue to the bank, it becomes apparent that the unrestricted privilege of issue may tempt bank officials to make hazardous loans. In the expectation that they will not soon be called upon to meet their promises to pay, and in the hope of greatly increasing their profits, they are apt to take chances by investing in paper not of the first class, and to tie up the bank's funds in securities not readily transformable into cash in cases of emergency. The danger of this practice consists in the fact that, if the securities prove to be poor, the safety of the bank is jeopardized and the security of the notes weakened. If they are not readily transformable into cash, the shattering of commercial credit from any cause may suddenly send in large quantities of the notes for redemption, exhaust the bank's funds, and force it into bankruptcy.

Many illustrations of the disaster caused by the over-expansion of bank credit through note issues might be given, but one, and that the most notable certainly in our history, will suffice. During the administration of President Jackson, 1828–36, the charter of the Second United States Bank expired, and was not renewed. This fact, combined with a genuine need for increased banking facilities and some encouragement from the President and Congress, was responsible for the establishment of a large number of new banking institutions, especially in the West and in the South. In most of these the right of note issue was practically unrestricted, and the great undeveloped resources on every hand, the success that seemed certain to attend almost any well-conducted business enterprise, the lack of capital and the optimistic character of the people, made the demand for loans very large and presented great temptations to the new banks. The result was an unprecedented expansion of note issues based upon securities whose value depended upon the successful outcome of all kinds of new and untried enterprises. The ease with which notes were issued and maintained in circulation caused many institutions to be established without cash or financial backing of any kind, and the discovery of this fact together with the failure of many of the enterprises which the banks had helped to finance brought on the great commercial crisis of 1837. All the bank-notes being discredited by the known worthlessness of a few, they were presented for redemption in such large numbers as to exhaust the cash reserves of nearly all the banks and force them into liquidation. The loss occasioned by this disaster was widespread and enormous in magnitude, and it gave the people of the United States an object lesson on the sub-

ject of banks and especially of bank-notes which has not yet been forgotten.

This and similar experiences in this country and elsewhere, however, must not be regarded as adequate ground for the condemnation of this form of currency. They indicate simply the necessity of some sort of regulation of the issue of bank-notes by public authority. The undue expansion of deposits is attended with the same danger, though perhaps in less degree. The means which have been found appropriate and efficient for the safeguarding of the banking business in all its branches will be described in the following chapter. In the remaining sections of this one we will consider the natural limits of the issue of bank currency and certain theories connected therewith.

5. The natural limits of the issue of bank currency.— The natural limits of bank currency must be sought in the magnitude of the sums of money and of the credit against which it is issued. As we have previously stated, at one time or another practically all the money of a country finds its way into the banks, but at any particular time only a portion is deposited, the remainder being in active circulation among the people and hoarded in one form or another. Of the amount deposited, a percentage must be kept as a reserve to enable the banks to meet the cash demands made upon them. In order statistically to determine the amount of money which is available for investment in securities, therefore, it would be necessary to know the total sum in existence, the percentage of it which remains normally in active circulation and in hoards, and the aggregate of the reserves kept by banks. The first two of these amounts cannot be accurately determined, and under existing arrangements only a portion of the banks regularly report the amounts of

their reserves. We must be content, therefore, with the mere statement of the fact that at any particular time a portion of the legal-tender money of a country, no matter what the source or manner of its issue, is employed by banks in the purchase of securities of various sorts against which notes and other forms of bank currency are issued.

It is less easy to establish the limits of bank credit. By nature it is very elastic and conceivably may be stretched to almost any extent. There is, however, a natural limit to its expansion in the demand for loans made necessary by the normal development of the credit system and by the magnitude of commerce. As explained in the preceding chapter, the granting of a certain amount of credit, and with it the creation of mercantile securities, is necessary in the prosecution of commerce according to present methods. These securities, as a rule, are offered to the banks for discount, and constitute the normal demand for loans, and, to the extent that their discounted value is in excess of the cash deposits available for investment in this form, they constitute a demand for the expansion of bank credit. Since the amount of these securities depends upon the degree of the development of the credit system and the magnitude of commerce, its statistical measurement is quite impossible. Of more importance for our purposes, however, is the fact that this amount, however great or small, constitutes the natural limit to the expansion of bank credit.

In order to make this clear we must note first of all that such securities rest upon a very solid basis, since their payment is assured by the completion of the commercial processes to the inception of which they owe their existence. All commerce at bottom is barter,

money serving simply as a medium of exchange. Its processes, however, require time, partly because many goods are bought and sold in an unfinished state, and must, therefore, pass through various processes before they are ready for consumption, partly because completed commodities must often be sent long distances and pass through the hands of numerous middlemen before they reach the people destined finally to consume them, and partly because some consumers do not possess the wherewithal to pay at the time they purchase goods. The mercantile securities of which we are speaking come into existence when the first transfer is made, serve to bridge over the period of time which must elapse before the counter-transfer, and are paid when the process of barter is completed. These facts may be illustrated as follows:—

A merchant sells goods during the winter to a farmer, taking in payment his notes due at the next harvest. When the farmer's grain and vegetables are gathered he sells them to this or some other merchant and with the proceeds pays the note. The process has really consisted in an exchange of the merchant's goods for the farmer's products, the interval of time between the transfers having been bridged over by the farmer's note. A New York merchant sells a thousand dollars' worth of cotton goods to a tea-merchant in China, receiving his pay in the form of a four months' bill of exchange which he sells to his banker. The China merchant meanwhile ships various chests of tea to New York dealers, with the proceeds of which he pays the bill when it falls due. In reality the cotton cloth and the tea have been bartered, the necessary interval between the arrival and sale of the cloth in China and the arrival and sale of the tea in New York having been bridged over by a bill of

exchange. A manufacturer of woollens buys on time, from commission merchants or producers, wool and other raw materials needed in his business. The notes which he gives in payment he ultimately satisfies with the proceeds of the sale of the cloth into which he has transformed the goods purchased. Here we have an example of the barter of completed products for raw materials, the interval of production being bridged over by notes.

So long as the processes of commerce are in the hands of men of integrity and good judgment and uninterrupted by crises or other unforseeable events, mercantile securities thus come into and pass out of existence in a perfectly normal way. Banks, however, are a necessary part of the machinery by which their work is accomplished, and these securities, therefore, may be said to constitute the normal demand for the exercise of bank functions.

At this point the query arises whether banks may safely expand their credit to the extent that is necessary to absorb all the securities of this class presented to them for discount. This depends upon their ability to supply forms of currency suitable to the needs of commerce, and upon the willingness of business men to use such currency. These two requisites being granted, the safety of such an extension of credit must be conceded. The presentation of securities for discount guarantees the existence of a demand for currency equal at least to their discounted value, and, if commerce readily absorbs the forms of currency issued by the banks on the basis of their credit, no harm can come from the discount of such securities in the amounts presented. The preceding sections of this chapter have established the ability of banks to furnish convenient and economical forms of

currency for nearly all business needs. The answer to the above query, therefore, depends chiefly upon the power of commerce to absorb these forms of currency.

Commercial motives may be regarded as sufficient to establish the general principle that, under ordinary circumstances, business men will use those forms of currency which are most convenient, economical, and safe, but some exceptions must be noted. Custom has a good deal of influence in this connection and may for a long time maintain in circulation forms of money which are in reality less convenient and economical than others which might be employed. In England, France, and Germany, for example, gold coins are used to a much greater extent than in the United States. This is due chiefly to the fact that bank-notes of low denominations are not permitted in those countries, but in part to the acquisition of the habit of using coin instead of paper in ordinary retail trade. Legislation may favour one form of currency and forbid another, as in the cases of bank-notes of low denominations in the countries just mentioned and of the silver certificates and treasury notes of the United States. The influences of custom and law, however, are most likely to show themselves in the retardation of the development of banking institutions rather than in the limitation of the circulation of the forms of currency they are permitted to issue.

The only real danger connected with the normal expansion of bank credit comes from commercial crises. These calamities can rarely be foreseen, though they occur with a considerable degree of regularity. They are characterized by a general shattering of credit and a tendency to demand payments in cash and to hoard gold. The result is a rapid diminution of cash deposits on the one hand and of the use of bank currency on the

other, the failure of business men to meet their notes when they fall due, and an increase in the demands made upon the banks for legal-tender money. Provision * against such exigencies can, however, be made, which, while not adequate to entirely remove the danger, may reduce it to a minimum.

Up to this point we have been attempting to show that a normal limit to the expansion of bank credit is set by the amount of mercantile securities which the ordinary processes of commerce under the forms of the credit system bring into existence. We must now explain how it may be stretched far beyond this limit by dishonest or unwise practices.

A considerable demand for loans comes from men who desire to undertake enterprises of uncertain utility and success and sometimes of a purely fraudulent nature; and if banks accept the paper of such men, they are apt to come to ruin, or at least to suffer great loss. The failure of such enterprises usually renders impossible the payment of the discounted notes at maturity, and leaves the banks liable for the redemption of the currency they have issued without the usual means of accomplishing it. Such events represent only half-completed exchanges, the first transfer having been made and the credit granted without the completion of the exchange by the counter-transfer. So far as the banks are concerned, the results are similar to those which follow commercial crises, the difference consisting in the nature of the event which caused the interruption of the commercial process. It should be observed that enterprises of this character are very apt to be financed by borrowed capital, the promoters themselves being equipped with enthusiasm,

* See Chapter IX, sec. 7.

optimism, plausibility, and shrewdness rather than money. As the chief dispensers of loanable capital, therefore, the officials of banks are in a position either to render great service to the community by refusing to discount the paper of such people, or to do great harm by furnishing them the funds they desire. So far as they yield to the temptation of investments of this character, they are expanding their credit beyond legitimate and safe limits.

Many varieties of perfectly sound securities are not suitable means for the expansion of bank credit. To this category belong bonds, stocks, and mortgages, and indeed most securities which represent fixed rather than circulating capital. Such credit instruments usually mature only after very long periods of time and depend for their value upon the profits of business enterprises rather than upon the successful completion of ordinary commercial processes. They do not, as it were, automatically turn themselves into cash every two or three months, and thus furnish to the bank the means of redeeming or retiring the currency issued at the time of their purchase. Take as an illustration the stock certificates of a manufacturing establishment, which represent the capital invested in the enterprise. They give to their holders the right to participate in the profits of the concern, and have a market price equal to the capitalized value of the actual or estimated dividends. Their life is as long as the factory, and they are transmutable into cash only by the dissolution of the business or by sale upon the stock-markets. In either case the process of transmutation is forced and not automatic, and does not take place with sufficient frequency or certainty of results to meet the needs of banks. As we shall show in the following chapter, banks usually possess certain funds which may, perhaps without great danger, be invested

in this class of securities, and bank-notes are frequently issued against them exclusively, but there are few, if any, exceptions to the general principle that large investments of this sort involve an overstraining of bank credit.

In this connection a distinction between the real object of a bank's investment and the security which it demands and receives therefor must not be overlooked. Large quantities of the class of securities we are now discussing are often deposited with banks as security for the payment of discounted notes. They are not in this case the property of the banks, and are available for use only in case of the non-payment of the discounted notes at maturity. Their presence in the bank's possession under these circumstances is an evidence of careful management and in no way constitutes an exception to the above mentioned principle.

The expansibility of bank credit and the impossibility of setting exact limits to it, together with the quantity theory of money and certain facts whose explanation is not apparent to the superficial observer, are responsible for a theory of bank currency an account of which may throw some light upon the subject we are discussing.

6. The currency theory.—The so-called currency theory had its origin in England in the early part of the last century, at the time when a forced circulation was given to the notes of the Bank of England by the suspension of specie payments and by investing the notes with the legal-tender power. In 1810 a Parliamentary Committee, appointed to investigate the rise of prices and the desirability and feasibility of the resumption of specie payments, reported that the notes of the Bank were depreciated and that their restoration to par and proper regulation would require the resumption of specie

payments at the earliest possible moment and its permanent maintenance. It was in the discussion of this report that the currency theory made its appearance. Its advocates claimed that, instead of a resumption of specie payments or in addition to it, what was needed was a strict and definite limitation of the quantity of bank-notes, and they based their claim upon the following process of reasoning, which constitutes the substance of the theory:—

In order that the value of the standard may be rendered stable and prices maintained at a fixed level, the quantity of the money of a country must be so regulated that its increase and decrease will correspond exactly to changes in the quantity of commodities and in the rapidity of their circulation. Bank-notes constitute the most expansible part of the currency, their issue depending simply upon the purchase of securities, and there is no limit to the amount of them that may be put into circulation, because they create a demand for themselves by raising prices directly in proportion to their quantity. On this account the maintenance of their value at a par with coin by the resumption of specie payments would not prevent inflation and a rise in prices. Hence the only way to cure the evil of inflated prices and to prevent its recurrence in the future was claimed to be the strict limitation of the quantity of bank-notes.

Crises were also explained in the following manner by means of this theory: The rise of prices, caused by an inflation of the currency through the overissue of bank-notes, overstimulates industry, thus causing overproduction and the promotion of unsound enterprises. The volume of discounts is then increased by a crop of unsound mercantile securities, and more notes are issued on them as a basis. This process continues until the

inflated bubble of credit bursts, when a crisis ensues and a general liquidation takes place, accompanied by bank failures and a consequent decrease in the amount of notes in circulation. The field is thus cleared for a repetition of the above cycle of events, which is certain to follow in due course. If the quantity of bank-notes is not properly regulated, therefore, we may expect a periodical recurrence of crises and of the disastrous effects which normally accompany them.

The bank act * of 1844 was the direct result of the currency theory, its most characteristic feature being the placing of a definite limit to the quantity of notes that might be issued against securities. Its results, however, were very disappointing to its promoters and supporters. It failed utterly to accomplish the chief end of its existence, namely, the prevention of commercial crises. These calamitous events followed with customary regularity and were no less severe than formerly. The friends of the theory have explained this failure on the ground that the framers of the act of 1844 overlooked deposits, which are quite as efficient a means of inflating the currency as bank-notes and the use of which as currency was greatly stimulated by the act itself. It should be noted, however, that the currency theory, whether applied to bank-notes or to deposits, is based upon the assumption of an unlimited field for the circulation of bank currency.

As was pointed out in the chapter on the quantity theory, the demand for currency is created by the needs of commerce, instead of commerce being created as a means of employing money which some one has manufactured or may wish to manufacture. This statement

* See Chapter X for the terms of this act.

needs no modification in view of the fact that banks are sometimes able to lend support to hazardous enterprises and to the plans of those who are inclined to push legitimate business too far. The rise of prices and inflation of the currency which generally follow the overstimulation of industry are results of the commerce and of the speculative operations which these enterprise promoters and over-optimistic business men create. The circulation of the bank currency follows and does not precede the increased commercial activity. The fact that bankers may conceivably themselves become promoters and may encourage others in unwise schemes by promises of assistance does not justify us in assigning to bank currency the causal influence which really belongs to the employment of the productive energies of a country in useless or unwisely planned enterprises. As reasonably might one assign the rise of the liquid in the barometer-tube as the cause of the storm, instead of the atmospheric changes which really produced it. The only remedy for the evil practices of which we are speaking is the elimination of the enterprise promoter and of the unwise business man. So far as possible, bankers should be prevented from lending help and encouragement to these persons, but we should not deprive the community of the advantages of the legitimate uses of an elastic currency because such men are occasionally able to make illegitimate use of the machinery by which it is created.

The natural limits to the circulation of bank currency described in the preceding section mark with sufficient accuracy the danger-line, and indicate the points at which safeguards are needed. We may now describe the safeguards themselves.

REFERENCES.

The various forms of bank currency are described in Macleod, v. I, ch. iv, sec. 4; Dunbar, chs. iv and v; Gambaro's *Lessons in Commerce*, chs. x and xi; Scharling, ch. i, sec. 2; and Schraut's *Organisation des Kredits*, chs. ii–vi.

On the proper limits to the issue of bank currency and on the currency theory see Macleod, v. II, ch. xiv, secs. 36–65, and ch. xvi; Conant's *Modern Banks of Issue*, ch. i and ch. v, pp. 119–129; Wilson's *Capital, Currency, and Banking*, chs. v–viii; Walker's *Money*, chs. xix and xx; Wagner's *Lehre*, chs. iv and v; Courcelle-Seneuil, bk. III, ch. iv; and Scharling, ch. iii, sec. 1.

CHAPTER IX.

BANK CURRENCY, ITS REGULATION AND SAFETY.

A GREAT many methods of safeguarding the banking business have been tried, but only those which have been found really efficient will be described in this chapter.

1. **The bank's capital and surplus.**—One of the chief means thus employed has for its purpose the protection of noteholders and depositors in case of bank failures, and consists of the requirement that banks shall accumulate and maintain an adequate *capital* and *surplus*. By *capital* is meant the funds contributed or guaranteed by the stockholders or proprietors of the institution at the time of its foundation, and by *surplus* is meant an additional fund accumulated from the profits of the bank after it has engaged in business. In the case of joint-stock institutions the capital is usually accumulated by the sale of certificates of the denominations one hundred or one thousand dollars, the possessors of which acquire in return for their contributions a right to share pro rata in the profits and government of the institution. The capital of private banks is contributed directly by the proprietors, who, of course, enjoy all the profits subsequently accruing. The *surplus* is ordinarily accumulated by setting aside or *reserving* a certain amount or proportion of the annually accruing profits until the total sum reaches a specified aggregate. For example, the law regulating the Imperial Bank of Germany provides that twenty per cent of the profits annually accruing,

in excess of a four and one-half per cent dividend to be paid to stockholders, shall be reserved until the total amount reaches one-fourth of the total capital.

The statutory regulations regarding the amount of capital of banks are far from uniform. The National Banking Act of the United States limits the indebtedness of banks to the amount of their capital stock, but defines indebtedness in such a way as to exclude the notes in circulation, bills of exchange or drafts drawn against money actually on deposit to their credit or due to them, and liabilities to stockholders for dividends and surplus profits. The German bank act of 1875 limits the interest-bearing deposits of the Imperial Bank to the amount of its capital and surplus. In England and France the statutes do not fix any relation between the debts and the capital of banks, but special laws have been passed from time to time providing for an increase in the capital of their respective banks.

One of the purposes of legislation of this kind is to provide adequate funds for the payment of noteholders and depositors in case of the failure of a bank which has invested its cash deposits and its own credit in unremunerative or inadequately remunerative forms. Provision is made, therefore, for the sale of the securities in which the capital and the surplus have been invested, and for the use of the proceeds to make up any deficiencies, and, in some cases, provision is also made for a levy upon the stockholders when these are inadequate. Noteholders are often given a preference in the form of a first lien on certain or all of the bank's resources, as in the cases of England, Canada, and the United States, but the design is to furnish adequate protection for depositors as well.

Regarding the value of this sort of legislation no question can be raised. As to the ratio that should

exist between the demand liabilities of a bank and its capital and surplus, however, and the form in which the latter should be invested, there is room for differences of opinion. If the requirements regarding capital and surplus are too stringent, the development of the banking business is liable to be retarded. The profits of bankers arise chiefly from lending their credit and the capital of their depositors instead of their own, and if such loans are restrained within too narrow limits, dividends will be inadequate and capital deflected from this form of investment. On the other hand, the carefulness and conservatism of bank officials is apt to be in proportion to the amount that they and their brother stockholders have at stake, and it is best, therefore, to make that stake as large as is consistent with fair profits and an adequate development of the banking business. No general rule can be laid down regarding this matter. Wise legislators must be guided by experience, and this is certain to vary. Old countries with plenty of capital and relatively few opportunities for investment can afford to be more stringent than countries differently situated in these particulars. No nation, however, can afford to be lenient in a matter which so closely concerns the very basis of its prosperity.

Regarding the investment of the capital and the surplus, practice has followed two main lines. In the United States and England the favourite form is government bonds. Our National Banking Act requires that at least one-third of the capital of national banks shall be invested in registered bonds of the United States, and most of the capital of the Bank of England is invested in consols. In most other countries the banks are left free in this particular, no special regulations being prescribed by law.

Wherever government bonds or some other special form of investment of capital is ordered for the purpose of securing special protection for noteholders, as in the cases of England and the United States, the wisdom of such regulations depends upon the need and desirability of this particular form of protection, a topic which will be discussed in a subsequent section of this chapter. Assuming, however, that a proper basis for note issues can be secured in other ways, and considering the question from the standpoint of all the interests concerned, there seems to be no good reason for prescribing any form of investment for the capital and the surplus which could not equally well be recommended for cash deposits and bank credit. The fact that these funds are protective in their character and not designed as a means of meeting ordinary cash demands renders tolerably safe the investment of at least a portion of them in securities which mature only after the lapse of a long period of time, but it does not furnish an adequate reason for such investment. Whenever ordinary mercantile securities are available in sufficient quantities they constitute just as safe an investment and offer the special advantages of maturing in a short time and of being more readily transmutable into cash in cases of emergency. If invested in this form, therefore, the capital and the surplus may serve not only as a means of paying off noteholders and depositors in case of bank failure, but also as a means of preventing failure. If the volume of mercantile securities is not sufficient, the proper remedy is a diminution of the amount of capital invested in the banking business rather than a change in the form of its investment.

2. Liquid securities.—By these are meant securities which mature in a short time, the chief representatives

of which are the bills of exchange and other forms of paper which come into existence as a result of the operation of the credit system. These have already been referred to as the chief objects of bank investment, and for this purpose their superiority to other forms of securities, such as bonds or stocks, has already been pointed out. We will here indicate the circumstances and the forms of legislation which tend to constrain banks to confine their investments chiefly to this sort of paper, and thus to prevent overstraining their credit.

Among these, of first importance are the actual needs of business men for coin and other forms of legal-tender money. Inasmuch as the greater part of the money of all kinds which is received in the ordinary course of business is deposited with banks, these needs show themselves in the form of demands upon the banks for cash. How are these demands to be met? One of the means is the new deposits which are daily made. A considerable portion of the cash which a bank pays out one day will return to it in the form of deposits in a comparatively short period of time. Exclusive reliance upon this means, however, is quite out of the question. In the first place, a margin over and above what is absolutely called for each day must be kept in order to ensure safety; and in the second place, it is evident that no bank can absolutely rely upon a return to it of all the cash which it pays out. Deposits are quite as apt to take the form of checks on other banks as that of cash, and the proportion of these elements in deposits is liable to vary from day to day. Moreover, cash once paid out may find a permanent lodgment in the pockets of the people; some of it may be lost; and a third portion may travel outside of the community to some other section. The latter fact must be taken into consideration especially by banks in

large centres which have extensive connections in other cities and in rural districts. Demands for cash in such instances may come from out-of-town places and must be provided for. For instance, during the autumn New York City banks are obliged to meet large demands for currency made upon them by institutions in the western part of the country. They cannot count upon the return of this cash before the lapse of several months, and in the mean time they must provide themselves with means for meeting local and regular demands. In these cases the chief reliance must be placed upon bills of exchange and promissory notes running for short periods of time. A bank which invests a considerable portion of its funds in this class of securities may so arrange its investments that a fair percentage of its securities will fall due each succeeding day, thus ensuring the payment into the treasury of the bank either of actual cash or of the means of securing it from other institutions or the government. In times of exigency securities of this sort may also be rediscounted and thus turned into cash even before their maturity.

While in general the self-interest of banks may be relied upon to secure the investment of an adequate amount of their funds in liquid securities, it has been found desirable in some countries to ensure this condition of things by legal enactment. In the United States the National Banking Act indirectly secures this end by prohibiting banks from investing in real estate except to the extent necessary for the accommodation of their business or to protect themselves against losses occasioned by the failure of their creditors to pay their debts on maturity. The laws regulating the banking business in Germany secure this end by providing that two-thirds of the authorized circulation of every bank

of issue shall be covered by bills of exchange maturing in not more than three months and bearing not less than two solvent names.

The desirability of some sort of legislation to prevent investments in unsound and unwieldy securities is beyond question. Bankers are not so unlike other men that they can always be relied upon to resist the temptations offered by enterprise promoters and friends in financial straits. However, the various laws which have been described are efficient in this direction in very different degrees.

Another method of accomplishing the same end is through the statutory regulation of the cash reserves. According to the laws of the United States national banks are grouped into two classes, and the requirement is made that the one class shall keep a cash reserve equal to twenty-five per cent, and the other one equal to fifteen per cent, of their deposits. In the former class are placed banks in the so-called reserve cities, which have a capital of at least $200,000 and are permitted to receive on deposit a portion of the cash reserves of other banks. This requirement is rendered efficient by the regulation that if a *run* or some other unforeseen event should reduce the cash reserve temporarily below this limit, the bank must stop discounting until it is restored.

Commendable as is the purpose of this legislation, it is open to serious objections. In the first place, it is difficult to classify banks according to their needs for cash. Different localities make very different demands upon their banking institutions, much depending in this respect upon the nature of the business carried on and something upon the customs of the region. Hence, when all banks are placed in two classes, one of two results is quite certain to follow. Either the limit set by law will

be so low as to afford no real protection, or it will be in some cases so high as to seriously interfere with the accommodation which the banks ought to be able to render to the business of the community. The weight of this objection becomes more apparent when we consider the effects of the clause requiring banks to stop discounting as soon as their cash reserves fall below the legal limit. This regulation makes these reserves practically useless at the time when they are most needed. Cash reserves are most apt to be infringed upon in times of incipient or actual crisis, and it is precisely on such occasions that banks should be able to accommodate business men to the greatest extent possible, that they should be able indeed to discount first-class securities in even greater amounts than in ordinary times. The provision in question, however, absolutely prevents this, and thus is apt to exaggerate the conditions which characterize such periods of industrial unrest. When it is remembered that the note circulation of our national banks is incapable of expansion to meet such an exigency, it will be seen that this regulation renders their currency absolutely inelastic in times of crisis, and thus tends to throw an undue portion of the burden of such times upon the state and private banks.

3. Special protection of noteholders.—In the legal regulation of the banking business most States have distinguished between depositors and noteholders and have granted special protection to the latter. The chief reasons for this practice consist in the peculiarities of bank-notes to which reference has already been made and for present purposes may be summarized as follows:—

(1) Notes circulate freely from hand to hand without endorsement, and, if issued in the proper denominations, may answer nearly all the purposes of currency, even

taking the place of coin. They are, therefore, less liable to be presented for redemption than other forms of bank currency, and in consequence make fewer demands upon the cash reserve. If unrestricted in their operations, bankers are thus tempted to neglect their reserves and to unduly extend their loans. Long and bitter experience has shown that bankers as a class are unable to resist such temptation, and that unrestricted and unregulated note issues are a fruitful source of bad banking and commercial disaster.

(2) In order that bank-notes may perform their legitimate functions they must be rendered absolutely safe. They are the only form of credit currency which is elastic and at the same time adapted to the needs of rural communities, small towns, and certain classes of the population in larger industrial centres; but unless they are perfectly safe they are liable to injure rather than benefit such communities. Moreover, unless bank-notes are rendered absolutely safe by appropriate legislation, their circulation at par is sure to be restricted to the immediate locality in which they are issued, and consequently their general use as a medium of exchange obstructed.

The legal regulations employed by different nations for the special protection of noteholders vary widely, but the most important of them may be summarized under the following heads:—

A. *The government bond system.*—This is the system employed in the United States and England. It consists, in substance, of compelling banks of issue to invest a portion or all of their capital in government bonds to be held as security for the notes issued. In the United States national banks are permitted to issue notes only to the extent of the par value of the bonds which they

have purchased and deposited with the comptroller of the currency as security. They are also required to keep on deposit with this public official, as a redemption fund, cash to the amount of five per cent of the total amount of their outstanding issues. In the case of the Bank of England a limit of £16,450,000 is set to the issue of notes against which the bank is permitted to hold government securities. For every note issued above this limit it is obliged to keep on hand pound for pound of gold. In the case of the United States the government guarantees the payment of the notes, it being adequately protected by the bonds which are deposited with it as security. The bonds held by the Bank of England as security for its notes, however, are not deposited with any public official, and the government does not guarantee the payment of the notes.

This system has the advantage of rendering bank-notes safe, but is subject to many disadvantages. In the first place, besides compelling the investment of a considerable proportion of the bank's resources in the form of non-liquid securities which are not available for use in times of exigency, it establishes relations of mutual dependence between the banks and the government which are often productive of bad results and are always of doubtful propriety. On the one hand the government may be tempted to use the banks as a market for its securities and thus as a means of bolstering up its credit, and on the other the banks are apt to look to the government for protection in times of peril. Neither of these practices are criminal or necessarily injurious, but they are apt to be productive of very bad results on certain occasions not unlikely to arise. For example, the treasury may be in need of money, and by offering especially good terms may tempt the banks to invest too

large a proportion of their funds in government bonds; or the banks may overestimate the government's interest in them or the advantage to them of their public character, and expand their credit in other directions to a greater extent than would otherwise have seemed to them safe. If not prevented by special legislation, the government may also make use of its relation to the banks to force them to accommodate it in other ways not consistent with good banking methods, as, for example, with advances upon treasury notes or other temporary securities. It is instructive in this connection to note the fact that in the cases of both the United States and England the practice of requiring banks to hold government bonds as security for their notes originated in the need for finding a market for government bonds, and not solely in considerations relative to an ideal banking system. While the specific evils to which reference has been made have not appeared in either of these cases, the reason is to be found in special circumstances and countervailing safeguards, and does not constitute good ground for the general recommendation of the system. Few, if any, exceptions can be taken to the general principle that a government should either establish banking institutions of its own or at least completely under its control, or leave the business entirely to private enterprise, surrounding it only with the most approved legal safeguards.

A second objection to this method of securing note issues is the fact that it renders them inelastic. In order to increase the quantity of notes in circulation under this system, the banks must be convinced of the need for an increase, the price of bonds must be such as to make it profitable, and time must be consumed in making the necesssary purchases, deposits, etc. However great

the need, the failure of the concurrence of these three circumstances may prevent a new issue, and in case of their concurrence the need may pass away before the lapse of the necessary amount of time. The retirement of the notes is also far from automatic, requiring, as it does, a decision of bank officials, and the voluntary setting in motion of the machinery of redemption. Indeed, under this system, so far as the regulation of their quantity is concerned, bank-notes are rendered essentially like government notes and are made quite as inelastic as these. As an evidence of this, attention may be called to our own experience from 1882 to 1890. The volume of our bank-notes constantly diminished, though the need for currency was rapidly increasing, and since 1900 the increase has not been adequate to meet the legitimate and manifest demands of commerce.

A third objection arises from the fact that this method of protecting note issues involves the maintenance of a permanent public debt. No substitute for national bonds has yet been found, notwithstanding a diligent search in the United States, the tendency of other similar securities * to fluctuate in value rendering them unsafe for such a purpose, unless the margin between the face value of the notes and that of the bonds is made so great as to make the issues unprofitable for the banks. Since a sound financial policy requires the gradual payment of public debts and their complete extinguishment whenever possible, under this system of note protection a government is liable to be confronted with the unpleasant alternative of either undermining its banking system, and thereby seriously interfering with commerce, or of adopting a financial policy which is expensive and waste-

* Such, for example, as the bonds of minor political divisions, like our states or municipalities, or the stocks and bonds of corporations.

ful and consequently opposed to the best public interests. The fact that many years may elapse before public debts will diminish to such an extent as to bring such alternatives within the field of vision of most governments does not diminish the force of the objection to one who is considering the relative merits of different methods of protecting noteholders.

B. *The safety-fund system.*—In accordance with this system banks are required to make contributions to a common fund to be deposited with a public official and preserved for the redemption of the notes of the banks which fail. It was employed at one time in the State of New York, but is at present best exemplified in Canada. Here the contributions aggregate five per cent of the amount of notes outstanding. This sum is kept at the provincial capital, and is employed exclusively in the redemption of the notes of any bank which may fail and whose resources are not adequate for such redemption. Whenever the fund is depleted new contributions are called for until it is completely replenished. This system secures safety quite as well as the one described in the preceding section. It has the further advantage of not limiting in any way the investment activities of the banks and of interfering in no way with the elasticity of their issues. Under it banks are permitted to invest their resources in any form which seems to them desirable. There is no limitation placed upon the amount of their issues, and no special machinery created for the redemption of notes which can interfere with their easy retirement when they become excessive, or their speedy issue in times of need. The chief difficulty of this system consists in the fact that it makes each bank suffer for the failure of any of the others. Wherever the system is applicable, however, this peculiarity should count as an

advantage. It creates an *esprit de corps* among banking institutions which is healthful, and makes it the interest of every bank to look carefully into the operations of its neighbours and to prevent by every possible means the employment of bad practices. No better method of securing sound banking can be conceived than one which makes it the interest of each institution to prevent bad banking on the part of its neighbours. This mutual watchfulness is decidedly healthful and has produced excellent results in Canada. It must be admitted, however, that this peculiarity renders the system inoperative, or at least extremely difficult of operation, in a country like the United States, whose territory is very extended, and in which the number and variety of banks are so great that it is practically impossible for any institution to keep a watchful eye upon all the others. It is probable that few banks in the United States would be willing to enter a system which would make them subject to assessment whenever a bank failure in a remote part of the country took place. In a country, however, in which the banking business is concentrated in the hands of a few large and strong institutions which are intimately connected with each other, the safety-fund system is undoubtedly the best which has yet been devised.

C. *Issues based on general assets.*—It is difficult to describe in a phrase the methods employed in those states in which neither the government-bond nor the safety-fund systems are employed. In general it may be said, however, that bank-note issues in all of these cases are based upon the general assets of the institution rather than upon any special set of securities set apart and mortgaged to noteholders or any cash fund especially devoted to their interests. The German banking

system furnishes a good illustration. By imperial legislation bank-note issues are distributed between the Imperial Bank and its branches and a few other institutions in such a way that each bank is permitted to issue a specified quantity of notes, on condition that it shall keep one-third of the amount on hand in cash and two-thirds in bills of exchange running not longer than three months and bearing not less than two solvent names, and that it shall comply with other regulations, which, however, do not especially concern this matter. Any bank which exceeds this specified limit must pay a tax of five per cent per annum to the government on the excess. In this way protection against excessive issues is secured at the same time with adequate elasticity. No special distinction is made between noteholders and depositors in the sense that one class has a lien prior to the other. The object of the legislation is to secure sound banking in all branches, and the assumption is that noteholders as well as depositors will be adequately secured under such circumstances.

The Bank of France furnishes another illustration. Like the Bank of Germany, this institution issues its notes on the basis of its general assets, and makes no distinction between depositors and noteholders. As a matter of fact, however, the intimate relation which exists between this bank and the French government amounts to giving its customers special governmental protection. It is well understood in France that the government will not permit the bank to fail, this feeling having a tolerably solid basis in the fact that at several critical periods in the history of the institution the government has come to its rescue and has thus created a precedent which has almost the force of law.

Under this system the only method of rendering

special protection to noteholders is that of giving them a first lien upon all the assets of the bank in case of failure. This can be regarded as sufficient, however, only in case a high degree of success attends the efforts to safeguard the banking business as a whole. If the various means to this end described in this chapter could be made so efficient as to confine the banking business within legitimate limits and to render exceedingly difficult, if not impossible, the overstraining of bank credit this system would possess great advantages, since it affords protection to depositors as well as to noteholders. So far it has attained complete success only in the cases of the great State systems which have been mentioned. Previous to the establishment of the national banking system, many of the states of the American Union had so unfortunate an experience with it that prejudice against it is widespread throughout the United States. The means by which the system was rendered successful in New England, however, during the very period in which disaster was attending it elsewhere, are often overlooked. Through the efforts of some of the leading banks of that region the so-called Suffolk System was inaugurated, by which a sort of clearing house for bank-notes was established, which put to frequent test the ability of the banks of issue to redeem their notes, and made the banks watchful of each other's methods. The essential feature of the system consisted in making the Suffolk Bank of Boston an intermediary for the delivery to each bank, for redemption in coin or in the payment of balances due it, those of its notes which came into the possession of the other banks in the ordinary course of business. By this means each bank had its own notes returned to it several times a year, and thus the bank-notes of this region were invested with the quality which constitutes

one of the peculiarities of checks, namely, that of returning frequently to the place of issue for a test of their validity.

It is probable that not all the possibilities of this system under the régime of free banking have been realized and its more extended use when the "bond system" disappears is almost certain. It is noteworthy in this connection that it will become more efficient as the field for the use of deposits expands, inasmuch as the quantity of notes will then bear a smaller proportion to the total assets of the banks, and a first lien will render greater protection. The use of deposits as currency normally increases as population becomes more dense and industry on a large scale develops and spreads into regions which were previously dominated by the farmer, the handworker, and the small tradesman. That this method of protecting noteholders will, therefore, become relatively more efficient as time advances seems highly probable.

D. *Issues based upon public credit.*—It is only necessary to mention this system in order unqualifiedly to condemn it. It consists in an attempt to float bank-notes on the general guarantee of the State that they are good and that the State will pay them in case the bank fails. In the early years of their history several American states tried it, and signally failed. Public credit is too indefinite and unmarketable a thing to serve as the basis of any kind of currency, and bank-notes issued in this way are certain to become practically government notes without the direct backing and control which such notes possess when issued and administered directly by the public treasury. In order to perform their legitimate functions in even an approximately satisfactory manner they must be based upon good mercantile securities or

upon bonds of the first class for which the general promise of a State or its signature on the bonds of a private corporation can never be regarded as an adequate substitute.

Before closing our discussion of this topic it should be noted that a combination of the safety-fund and general-assets systems is possible. Indeed, this is the Canadian system, noteholders there having a first lien upon all the assets of the bank, as well as the protection of the fund deposited at Ottawa. In Canada, however, it is the safety-fund upon which special reliance is placed. It would be possible, however, to create a system in which this fund would play quite a subordinate rôle, and in which the emphasis would be placed upon the safeguarding of the bank's ordinary investments. Such a combination might be possible and efficient in cases in which either system alone would be impossible or inadequate.

4. Public inspection and supervision.—Publicity is an important safeguard against unsound banking, and it also assists banks in obtaining the confidence of the public. So important to a bank is it that the people generally should believe in its soundness and stability that it is probable that self-interest would lead them to publish their accounts or in some other way keep the community informed regarding the nature of their business. In most States, however, it has been found best to enforce publicity in one form or another, the most common method being to require the publication of banks' accounts. In the United States national banks are required annually to make to the Comptroller of the Currency at least five reports of their resources and liabilities. The dates for these are not specified in advance, the Comptroller being permitted to call for them whenever he sees fit. When submitted they must be

published in a newspaper in the place where the banking association is established. In Germany banks of issue are required to make weekly reports which are published in the periodicals. The Bank of France is compelled by law to furnish to the government every six months a full statement of its operations, and a balance-sheet of the bank is published in the official journal every Friday. The accounts of the Bank of England are also regularly published in the financial journals of the kingdom.

In addition to the requirement that bank accounts must from time to time be submitted to public inspection, some provision for supervision and examination by public officials is common. The Comptroller of the Currency in the United States is authorized, and indeed directed by law, to inspect the national banks at frequent intervals. He has full authority to call for all books and securities, and to make as full and complete an examination as he desires. In the great State banks of Europe provisions for special inspection are rendered unnecessary by the appointment of public officials to the immediate control of these institutions. The governor and two sub-governors of the Bank of France are appointed by the ministry. The Imperial Bank of Germany is under the direct control of a board of curators composed of the Chancellor of the Empire, who is president, and four other members, one named by the Emperor and the other three by the federal council. This body meets every three months and examines reports regarding the bank's condition and the operations which are being carried on. The immediate administration of the Imperial Bank is confided to a board of directors appointed directly by the imperial government from a list nominated by the federal council. The Bank of England in form is a purely private institution, its directors being appointed

by the stockholders, but on account of its intimate connection with the English government it is practically under the direct supervision of government officials.

The efficiency of the practice of publishing accounts as a safeguard against unsound banking depends largely upon the ability of the public to interpret these statements when they appear. It is desirable, therefore, that we should examine a typical bank account and note the manner in which the chief operations of banking are revealed in its items. The following has not been copied from any report, but contains the essential items, and may be regarded as typical:—

Liabilities.		*Resources.*	
Capital.....	$100,000	Loans.....	$265,750
Surplus.....	20,000	Bonds and stocks	10,000
Undivided profits	2,750	Real estate.....	15,000
Deposits.....	264,000	Other assets.....	8,000
		Cash reserve.....	88,000
	$386,750		$386,750

The most important items in this account have already been explained. By *capital* is meant the funds originally contributed by the stockholders, and it stands here under the head of liabilities because the officers of the bank are responsible to them for its use and must distribute the dividends on the basis of it. It should be noted, however, that capital stock is not payable on demand, and is thus a very different sort of liability from deposits and notes. By *surplus*, often called *reserve*, is meant the profits which have been earned, but which are not distributed in the form of dividends, but left with the bank in order to strengthen its resources. The accumulation of a surplus amounts to an

increase of the bank's capital. The *undivided profits* are the profits not yet completely earned, but which will be available for distribution to the stockholders when the outstanding loans have matured. The *deposits*, as was explained in a previous chapter, are the sum total of the credit accounts on the books of the bank in favour of its customers, some of which have originated in loans and others in the deposit of actual cash. Turning now to the *resources*, we note that the item *loans* is represented in the bank's safes and portfolios by the notes of business men and corporations, falling due, some perhaps in thirty, some in sixty, and some in ninety days, and by the bills of exchange it has purchased. The terms *bonds and stocks* and *real estate* are self-explanatory, the latter being represented chiefly by the building and grounds occupied by the bank. Under the head *other assets* are included the various items of miscellaneous property which in one way and another have come into the possession of the bank, possibly through the foreclosure of mortgages or other means not necessarily involved in the prosecution of the bank's peculiar business. The *cash reserve* is the cash on hand available for the payment of depositors and the meeting of other cash obligations.

As variations of this typical account it should be noted that banks of issue add to the items falling under the head *Liabilities* that of *notes* or *issues;* that instead of the term *loans* we often meet the term *discounts;* and that under the general head *Deposits* may be distinguished *current accounts* and *time deposits*, and sometimes *deposits of other banks* and *private deposits*. The Bank of England uses the term *rest* instead of *surplus*.

The relation between these various items may best be revealed by considering the effects upon this account of the most important daily operations of the bank. Sup-

pose that new loans to the extent of $3000 are made, which are to mature on the average in sixty days and to bear interest at six per cent. Three items of the account must then be changed. The *loans* will be increased to $268,750, the *deposits* to $266,970 ($264,000 + $2970, which is $3000 − $30, the discount for sixty days), and the *undivided profits* to $2780. It should be noted that the cash reserve now bears a smaller proportion to the demand liabilities than before.

Suppose next that depositors draw upon their accounts to the extent of $10,000, receiving their pay in cash. The item *deposits* will then stand at $256,970 and the *reserve* at $78,000. This again reduces the proportion of the reserve to demand liabilities. If these depositors had accepted bank-notes instead of cash, the result would have been different. The reserve would have remained as before; the deposits would have been diminished to the extent of $10,000, and a new item of $10,000, namely notes, constituting also a demand liability, would have been introduced on the side of liabilities. In this case, the proportion between reserve and demand liabilities remains unchanged.

Let us suppose next that loans to the extent of $10,000 fall due and are paid in cash. The item *loans* will then stand at $258,750, having been reduced to the extent of $10,000, and the cash reserve will have been increased to the same extent. The payment of these loans might equally well have been accomplished by a corresponding diminution of the item *deposits*. If the persons whose notes have fallen due are also depositors, they may hand to the cashier of the bank their checks for the amount. It is noteworthy that in either case the proportion of the reserve to demand liabilities is increased.

A fourth supposition will enable us to appreciate the effect of investments in long-time securities. When the accounts of the bank were in the condition represented by the statement on p. 178, suppose that $50,000 had been invested in *bonds and stocks*. The cash reserve would have been reduced to $38,000, thus enormously diminishing its proportion to the demand liabilities, and in no respect increasing the bank's ability to command cash on short notice, except through the hazardous plan of throwing its bonds and stocks upon the market for sale. Such a procedure would be almost certain to excite the suspicion that the bank is not in a sound condition and might precipitate a *run* and eventually a failure. Moreover, a bank would have no motive for investment in such securities if it were reasonably certain that it must sell them in a short time to replenish its reserve. It would much prefer to invest in securities having a higher rate of interest and capable of automatically replenishing the reserve by maturing at short intervals.

It thus becomes evident that many of the essential features of the banking business are revealed in such simple statements of aggregated items as have been described. The proportion of the capital and the cash reserve to the other liabilities, the extent of the bank's ability to meet cash demands made upon it and the aggregate of such liabilities, the amount of the total resources invested in mercantile securities as distinguished from stocks, bonds, etc., the extent of liabilities to other banks as well as of the claims upon them, ought all to become clear upon the examination of such an account. Adequate provision for supervision and examination by public officials ought to guarantee the correctness of the accounts, and make bank officials careful

regarding the character and soundness of the men whose paper they discount.

5. Other safeguards of sound banking.—Besides those already mentioned attention should be called to certain safeguards of a minor character, but nevertheless of value. Among these may be mentioned the limitation of the amount of the paper of any one man which a bank shall be permitted to discount, the prohibition or strict limitation of loans to stockholders, the limitation of the number of shares of stock which any single person may hold or of the amount of his declared wealth which a stockholder shall be permitted to invest in the banking business, and provisions for securing the frequent return of notes to the bank of issue.

Bankers are frequently tempted to accept in almost unlimited amounts the paper of business men of success and good reputation for sound financial methods. However, this practice is dangerous, and may be prevented by a judicious regulation of the sort above mentioned. The most successful business men sometimes make mistakes, their very success frequently blinding them to danger by giving them too much confidence in themselves. A man who has always succeeded in his undertakings may get the impression that failure in his case is impossible and become rash from mere faith in his so-called "lucky star." A strict statutory limitation of the amount of credit such men can obtain from banks serves frequently as a healthy check, and removes from the banks a temptation otherwise difficult to resist.

The limitation of loans to stockholders is very desirable. Some of the worst wrecks in banking history have resulted from stockholders' abuse of the privilege of using the banks in which they are interested for the discount of their own paper. Being in practical control of their own

institutions, statutory provisions constitute the only efficient checks against such an abuse. Without these the proprietors of banks have the power practically to convert their own credit into money. If the bank's portfolios are filled with their paper instead of that of the stanch business men of the community, their own property becomes the sole basis for the bank's circulation, and that is liable to be dissipated by the same rashness which led them to put the bank in jeopardy.

The limitation of the amount of stock which any one person shall be permitted to own and of the proportion of his wealth which he may invest in this form has the double purpose of preventing the complete control of a bank by a single person and of rendering efficient the provision authorizing an assessment of the stockholders in case the bank fails without resources sufficient to pay its depositors and noteholders. It is seldom good policy to give to a single individual complete control of an institution of such great public importance as a bank. The combined judgment of several is usually safer than that of one, especially regarding the advisability of a loan or the assumption of a risk, and in the banking business several stockholders serve as checks upon each other and promote conservatism of management. The right to assess stockholders for the purpose of making up deficiencies in cases of bad failure is of no value if they have all their property at stake in the bank. The prohibition of the investment of all one's wealth in this form does not guarantee the existence of extra property upon which a levy may be made at the date of a bank's failure, the dissipation and loss of the property in other ways being, of course, possible. Such a provision, however, is a wise precautionary measure and may be of great value.

The importance of securing the frequent return of notes to the issuing bank has already been mentioned in connection with the Suffolk System of New England. It puts the power of the bank to redeem its notes to frequent test, and thus prevents overissue in cases in which otherwise banks might make improper use of the ease with which such notes circulate and of their tendency to remain in circulation for long periods of time. It should be here mentioned that this end can be secured by a statutory provision making it illegal for a bank to use the notes of other banks except in payments to them or as a means of securing coin by redemption. Whenever such notes were received on deposit or in payment of obligations due, it would then be necessary either to hold them as a reserve fund or to send them back to the bank of issue. Such a regulation would unquestionably diminish to some extent the circulation and increase the expensiveness of notes, but it would still leave to them a wide field of usefulness, and make practicable their issue against general assets in cases in which that would otherwise be of doubtful propriety. It is a measure not, perhaps, to be recommended in all cases, but to be held in reserve for use when considerable modifications of existing systems of note issue become necessary.

6. Importance of honesty, wisdom, and discretion in bank officials.—Since the chief reliance of a bank, beyond its actual reserve, must be placed upon the short-time business paper which it holds, it follows that the best security for its safety must be the honesty, wisdom, and discretion of its officers. Upon these rests the responsibility of selecting the bank's creditors. If these are reliable, if they always meet their obligations when they fall due, and if their business is sound, the bank will be safe, provided a proper proportion between the demand

liabilities and cash reserve be maintained. What this proportion should be is a matter which, as we have shown, must be left to the discretion of bank officials.

In this connection it is interesting to note that the interest of bankers as a class is in the maintenance of sound rather than loose methods. To no group of business men is an unimpeachable reputation for financial soundness and reliability more vital. The banker's stock in trade is his credit. If that goes, his business is ruined. Under these circumstances he is like a retail merchant with no goods upon his shelves. He has nothing to sell. He is really much worse off than the merchant, since the latter can stock up his store with fresh goods which will tempt the public to buy, while the banker can rarely buy back his lost or shattered credit. There is no such thing in the market for sale, and if he ever recovers it, it will be by the slow process of a life of business integrity, thus convincing the public that he is worthy of confidence. In view of this fact, bankers are apt to be conservative and to constitute a check each upon the other.

7. Banking in times of crisis.—In times of crisis or panic the measures which have been described are frequently inadequate to prevent the failure of banks. On such extraordinary occasions large numbers of business men are unable to meet their obligations, either on account of the failure of their enterprises or because their debtors have failed to pay, and the reserves of banks are liable to run low because they are not replenished in the ordinary way by the payment of maturing obligations and because the demand for cash is unusually large. Extraordinary measures are, therefore, necessary at such times.

When a crisis is in an incipient stage bankers are usually confronted by a dilemma. The demand for loans

is unusually large, and their cash reserves are unusually low. If they respond to the extraordinary demand for loans, they run the risk of completely exhausting their cash, and if they stop discounting for the purpose of protecting their reserves, they are liable to intensify the crisis. They may possibly precipitate a panic, and with it a run upon the banks, which means almost certain disaster. The problem is to steer a course midway between these extremes. It is in their interest as well as that of the community to accommodate, so far as possible, sound business men who are temporarily hard pressed, but at the same time they must protect themselves against people who are hoarding money, and they must continue to meet their obligations to depositors and noteholders. To this end the device ordinarily employed is the raising of the rate of discount. This tempts the holders of money to turn their cash into the channels of circulation, and it discourages borrowing on the part of those who are not in real need. The Bank of England has employed this device at various times in her history with excellent results.

Another device for meeting the exigencies of a time of crisis is the provision for an emergency circulation of bank-notes. If such notes are issued in appropriate denominations, and if they are properly backed with sound securities, they may answer all the purposes of currency. The permission to issue them in extraordinary quantities, therefore, on occasions of great stringency enables banks to increase their accommodations to business men without too seriously endangering their reserves. The extra notes are not likely to be immediately presented for redemption, and, if provision is made for their redemption and retirement as soon as the stringency has passed, they present no obstacle to sound banking.

To this latter end the plan of taxing the extra issues seems best adapted, since it makes the extra notes unprofitable, except at times when the rate of discount is very high, and ensures their retirement as soon as the rate has fallen to the normal level.

In the absence of any provision for an emergency circulation in the United States, the bankers of New York City who are members of the clearing-house on several occasions have adopted the plan of combining their reserves. This is accomplished by permitting banks whose reserves are running low to deposit securities at the clearing-house, in return for which certificates are issued, which the banks agree to accept in the payment of balances. When the pressure of the crisis has passed the certificates are retired and the securities returned. By this means the reserves of all the banks are practically combined and made available, if necessary, for exclusive use in the accommodation of business men. This plan worked efficiently in 1860, 1873, 1884, 1890, and 1893, and does credit to the ingenuity and public spirit of the New York City bankers.

8. Is bank currency safe?—At this point the query naturally arises whether, with all the safeguards that have been mentioned, bank currency is really safe. In answer it may be said, first of all, that the history of banking in well-regulated and well-governed communities shows that the percentage of bank failures is very small, and that the losses to depositors and noteholders when compared with the grand total of notes and deposits is so small as to be almost insignificant. It should also be noted that human ingenuity has not yet done all that is possible in the direction of devising safeguards for the banking business, and that banking under direct government auspices is possible and might be expedient, if that

were the sole condition of safe and sound banking. In the light of experience, however, it would seem safe to say that bank currency at the present day is safe enough to warrant its use to an extent even greater than is now customary.

REFERENCES.

Macleod, v. II, chs. xviii and xix, contains a discussion of many of the topics included in this chapter. See also Dunbar, chs. vi–xi; *Report of the Monetary Commission of the Indianapolis Convention*, pp. 244–246; Wagner's *Zettelbankgesetzgebung*, ch. ii, sec. 3, and ch. iii, secs. 2 and 4, and his *Kredit und Bankwesen*, ch. ii, sec. 2. Scharling, ch. ii, sec. 3, gives a good discussion of the nature and methods of investing the capital and surplus of banks. For a discussion of the safety of bank currency see Gilbart, v. I, ch. xxi.

CHAPTER X.

THE CHIEF BANKING SYSTEMS OF THE WORLD.

The relations necessarily established between banks by the processes of exchange, together with the regulations imposed upon them by law, custom, or business usage, constitute in each nation a banking system, which often reflects national characteristics and peculiarities of national history. A description of the systems that have been developed in the chief commercial countries of the present day will show how the principles described in the preceding chapters have been applied and developed, and will throw light upon the subject of banking machinery and methods which will be treated in the next chapter.

1. The English system.—The chief characteristics of the English system date back to an act of Parliament passed in 1844. At that time the banking business of the country was conducted by the Bank of England and its branches, a number of joint-stock banks, and a still larger number of private institutions. The joint-stock banks were corporations of the modern sort, whose capital was represented by stock issues, and may be classified in two groups on the basis of the privileges they enjoyed. Those which were located in the city of London and within a radius of sixty-five miles of the capital were not permitted to issue notes, but were allowed to carry on all other banking operations. Those outside of the

sixty-five-mile limit were not in any way restricted in their operations, and seventy-two of them were issuing notes at the time of the passage of the act of 1844. At the same time two hundred and seven private banks in addition to the Bank of England and its branches exercised the right of issue.

The note issues of these various institutions were entirely unregulated, and it was the belief of many of the statesmen of the period that to this fact was due the severe commercial crisis through which the country had recently passed. The primary purpose of the act of 1844 was to remedy this difficulty by prescribing an absolute limit to the quantity of notes that might be put into circulation. To this end it was thought desirable, so far as possible, to concentrate the right of issue in the Bank of England. One of the clauses of the act, therefore, prescribed that private and joint-stock banks should not in the future be permitted to extend their issues beyond the point at which they stood twelve weeks preceding April 27, 1844. It was further prescribed that in case any of these banks should at any time give up their right of issue, the government might allow the Bank of England to increase the quantity of notes based upon securities. Another clause of the act aimed at the regulation of the issues of this bank and its branches. For this purpose it provided for the organization of a banking department and an issue department. To the latter was assigned the exclusive work of issuing and redeeming notes. Against securities transferred to it by the banking department it was permitted to issue notes to the amount of £14,000,000, but beyond this limit it was compelled to keep pound for pound of gold coin or bullion in its vaults, and, on demand, it was obliged to redeem all notes in coin or bullion. So far as the public is concerned the effect of this

legislation is to make the issue department merely a means of exchanging coin for notes and *vice versa*.

To the banking department is left the transaction of all other kinds of business which naturally belong to a great banking institution. The act of 1844 contains no special regulations pertaining to this department of banking, whether carried on by the Bank of England or the joint-stock or private institutions. Indeed, like many other English institutions, the banks are regulated chiefly by unwritten laws which custom and business experience have imposed upon them.

The centre and controlling force of the English system is the Bank of England, the central office of which is located in the city of London, with branches scattered all over the kingdom. From the beginning of its history, in the closing years of the seventeenth century, to the present day, this institution has been in very intimate relations with the English government. It owes its origin to a loan which its stockholders made to William and Mary, in return for which the privilege of conducting a banking business was conferred upon them. The charter was granted for a limited number of years only, and on each occasion of its expiration the bank has been compelled to defend its privileges before Parliament in order to secure a renewal, and thus periodically to submit its affairs to the legislative department of the government for inspection and review. During the greater part of its history, also, the bank has served as the chief financial agent of the State, receiving on deposit and disbursing the funds of the government, and frequently accommodating it with loans. The negotiation of new bond issues, the payment of interest and annuities to bondholders, and indeed the general administration of the public debt is entrusted to it. The fact that the

greater portion of its capital has from the beginning been invested in public securities has helped to bring its own interests and those of the government into harmony with reference to many important financial matters. This intimate connection with the State, on the one hand has given the bank a public character not possessed by any other similar English institution, and, on the other, enables the government to exert a controlling and restraining influence upon its conduct, and to come to its assistance in times of trouble. For example, during the great crises of 1847, '57, '66, and '73, when the cash reserve of the bank had fallen to so low a point as to threaten bankruptcy, the government suspended the act of 1844, and permitted it to issue notes beyond the limit fixed by that law; during the Napoleonic war ~~she~~ it authorized, or rather compelled, the bank to suspend specie payments, and by a later act prescribed the date and the conditions for resumption.

The point of chief significance in connection with the relations of the Bank of England to the other banking institutions of the kingdom is the fact that the greater portion of their cash reserves is deposited in the London institution. The chief significance of this practice consists in the control which the bank thus gains over the metallic reserve of the entire country, and the danger to which, on this account, it is at times exposed. Whenever a new supply of coin enters the country from any source it speedily finds its way to the vaults of the bank, and, when a demand for gold for exportation or for use in the arts anywhere exists, it is speedily felt by the bank and results in a drain upon its cash reserve. Inasmuch as the extensive commercial connections of England in every part of the world have given the bank a dominant position in the conduct of foreign exchanges, it has

become the chief distributor of the precious metals for the entire world, and has thus acquired an influence which no other similar institution possesses, as well as a position of responsibility which exposes it to dangers from which less powerful institutions are exempt.

The banking system of England was the first to develop in Europe, and, with the possible exception of that of the United States, is the most extensive and highly developed one in existence. Some of its features have been copied in other countries, but most of them are incapable of application elsewhere, being essentially English in their character and deriving their strength from the peculiarities of the English nation. It is, therefore, a system very difficult to criticise. In most respects it works well in England, and can only be rightly judged in the light of English experience. The system of note issues is essentially inelastic. It was purposely made so by the authors of the act of 1844, whose minds were beclouded by the currency theory. It is interesting to observe that only bank-notes of large denominations are permitted, the smallest one issued being of the value of five pounds. Bank-notes thus play a relatively unimportant part in the English currency system. The total amount in circulation in April, 1900, was approximately £63,552,943, of which £48,271,530 were issued by the Bank of England. Of this total, £35,403,787 were represented by coin and bullion kept on hand in the tills of banks for their redemption, only £28,149,156 being issued against securities. It thus becomes evident that most of the bank-notes are simply substitutes for coin. The elastic part of the English currency system consists in its deposits, which in 1900 were estimated at the enormous figure of £500,000,000. For the same year the amount of gold in circulation was estimated at

£92,460,000, and the amount of subsidiary silver at £22,380,000.

2. The banking system of the United States.—In this country three kinds of institutions must be distinguished: the national banks, founded under authority of federal law; the state banks, organized in accordance with the provisions of the banking acts of the various states; and private institutions which have sprung up without the authorization of any special or general statute. In 1900 the number of the first was 3732, of state banks 4369, and of private banks more than 6000.*

The national banks occupy a central and dominant position in our system, partly because they are supervised and regulated by the federal government, partly because they are the most convenient correspondents for the state and private banks, and partly, probably chiefly, because they enjoy a monopoly of the right of note issue. Their characteristics may be seen in the regulations pertaining to note issues and deposits.

Every institution which is organized under the authority of the National Banking Act is obliged to invest a portion of its capital in United States registered bonds, to the par value of which it is permitted to issue notes, provided their market value is not below that point. These bonds must be placed on deposit with the Comptroller of the Currency at Washington, and in addition an amount of cash equal to five per cent of the notes circulated by the bank. This latter sum is intended to be used in the redemption of notes, for which the Comptroller of the Currency acts as the agent of the banks. Secured by the bonds, the government guarantees the

* The number of private banks can only be estimated, no actual count of them ever having been made.

payment of the notes in case of the failure of the banks.

From the standpoint of the depositors, especially noteworthy are the provisions requiring the accumulation of a surplus equal to twenty per cent of the capital stock, the assessment of stockholders to the amount of the capital invested, in case the bank fails with inadequate resources, and the prohibition of investments in real estate. The most striking feature of the act, so far as the protection of depositors is concerned, however, is the provision relative to the cash reserves. For banks located in a number of specifically named cities, designated as reserve cities, the minimum cash reserve is fixed at twenty-five per cent of the aggregate amount of the notes and deposits. For all others the limit is fifteen per cent of this aggregate. Banks of the former class may receive on deposit sixty per cent of the reserves of the other banks, and may deposit one-half of their own in the national banks of New York City, Chicago, and St. Louis. Whenever the cash reserve of any bank falls below the limit fixed by law, it is the duty of the Comptroller of the Currency to notify such an institution of its condition, and to direct it to stop all discounts until it has accumulated the proper amount of cash, and, in case the bank fails to accomplish this within thirty days after due notice has been given, he is authorized to appoint a receiver and to wind up its affairs.

In order to ensure the rigid observance of all these regulations, the Comptroller is under obligations to inspect the banks at frequent intervals, and to call upon them for complete reports of their condition at least five times during each year, the dates to be fixed by himself.

The effect of the provisions relative to the deposit of

reserves, together with her position as the commercial metropolis of the country, makes the city of New York the centre of our banking system. The banks in small towns and rural districts naturally use as their out-of-town agents those banks in the reserve cities in which they keep their deposits of cash, and these for the same reason use the banks of New York City. Private and state banks cannot avoid doing business through the same channels, and consequently group themselves about the same centres. The position of New York City in the exchanges of the United States is, therefore, not unlike that which the city of London occupies with reference to Great Britain.

It is impossible in a brief space to summarize the regulations pertaining to state banks. Certain features found in the laws of most of the states, however, will be described. Practically all the states authorize the issue of notes as well as the performance of the other banking functions, but the banks organized in pursuance of their laws do not make use of this right on account of a ten per cent tax levied upon such issues by a federal law which has been in force since July 1, 1866. Previous to that time state banks issued notes in large quantities and under a variety of systems of regulation, and this tax was levied for the purpose of compelling them to yield this field of activity to the national banks, then newly established. Friction and financial loss were diminished by a provision of the National Banking Act, providing for the easy reorganization of state banks and their transformation into national institutions. For the protection of depositors, most of the states have incorporated in their general banking acts the principles described in the preceding chapter. It is common to hold the stockholders of state banks liable to assessment for the pay-

ment of the debts of the bank, in case of failure, to an amount at least equal to their capital stock, and in some instances to double that amount. Publication of accounts at frequent intervals is commonly required, and many of the states provide for the careful inspection of banks by public officials. They rarely require a minimum cash reserve, it being generally regarded as best to leave that matter to the discretion of bank officials.

As a rule private banks are free from statutory regulation. They do not come under the general banking acts which control corporate institutions, and special legislation pertaining to them has rarely been attempted. They are seldom required even to publish their accounts or to make a report of their condition to any state or national officer. The Comptroller of the Currency has attempted to induce private banks to send in reports of their condition, but a very small minority have seen fit to comply with his request. The only efficient regulations to which this class of banks is subjected are those imposed by the very nature of the business in which they are engaged, and grow out of the supervision which state and national institutions impose as a condition of doing business with them. Inasmuch as no bank can live to itself alone, the necessary connections which it must form with other institutions make this supervision quite efficient, and, in recent times at any rate, has been sufficient to prevent any great abuse of the principle of free banking.

The last report of the Comptroller of the Currency estimated the amount of bank currency in circulation in the United States on July 1, 1900, as follows:—

National bank-notes	$300,161,552
Deposits	4,008,686,609

The magnitude of this as compared with other forms of currency may be seen from the following statement, quoted from the same report, giving estimates of the other forms of currency in circulation at the same date:

Gold coin (including bullion in treasury)...	$614,918,991
Gold certificates	200,555,469
Standard silver dollars	66,429,476
Silver certificates	408,499,347
Subsidiary silver	76,294,050
Treasury notes of 1890	75,247,497
United States notes	316,614,114
Currency certificates (act of June 8, 1872)	3,705,000
Total	$1,762,263,944

It is thus seen that the volume of bank currency in the United States is nearly three times as great as that of all other forms of currency combined.

3. The banking system of the German Empire.—The main features of the banking system of the German Empire are due to an imperial act passed March 14, 1875. Previous to that time there was a considerable number of private banks scattered throughout the empire, most of which had come into existence since 1848, and were a direct result of the liberal wave which spread over the country at that time. A few large banks, especially chartered by their respective states, were conspicuous among the mass of private institutions. Of these the Bavarian Mortgage and Exchange Bank of Munich, chartered by the Bavarian government, and the Leipzig Bank, chartered by the Saxon government, are noteworthy; but the most important of all was the Bank of Prussia, which was founded by Frederick the Great in the eighteenth century. It was a strong state institution

with a large number of branches, and transacted the greater part of the banking business of that important kingdom. In 1875 thirty-two of these banks were issuing notes, under regulations imposed by different states, and varying widely in character and efficiency.

The purpose of the act of March 14, 1875, was to unify the banking system of the empire by bringing it under the control of a great central institution in the management of which the imperial government should be supreme. This purpose was accomplished by a series of regulations which deprived the various states of the right to found banks of issue, authorized the establishment of the Imperial Bank with a central office located in the city of Berlin and with numerous branches all over the empire, prescribed the conditions under which other institutions should be permitted to exist, and fixed their relations to the imperial system.

The Imperial Bank was built upon the foundations of the Bank of Prussia, which was purchased by the imperial government and transformed into the new institution. It was permitted to establish branches in any part of the empire, and was required to establish such branches when so directed by the Bundesrath. Private individuals were permitted to own its capital, but its government was entrusted to three bodies: a committee of four, consisting of the Chancellor of the empire and three other persons appointed by the Emperor and the imperial council; a board of directors appointed for life by the imperial council; and a board of administrators elected by the stockholders. The immediate management was entrusted to the board of administrators, but on all matters of great importance, such as those pertaining to the policy of the bank and its relations to the government and to other institutions, the decision of the

board of directors, and in the last instance of the council of four, was final.

It was the aim of the authors of this act ultimately to give to the Imperial Bank and its branches the exclusive right to issue notes in the empire. It was not thought best, however, to attempt to accomplish this at once, and consequently regulations were made prescribing the conditions under which the thirty-two banks already mentioned might become parts of the imperial system, and share in the issue of notes. Among these the following are the most important:—

(1) In the year 1891 and every tenth year thereafter the imperial government was to have the right to deprive these banks of their privilege of note issue without compensation.

(2) The amount of notes to be issued by all the banks exclusive of the imperial institution was limited to 135,000,000 marks, to be distributed among them on the basis of the population of the locality served and the amount of the business transacted. In case any bank should at any time voluntarily give up its right of issue, the amount of notes thus withdrawn was to be added to the quota of the Imperial Bank, which was fixed at 250,000,000 marks.

(3) All the banks were subjected to the same regulations as regards reserve, character of securities, etc., the requirement being that one-third of the assigned quota must be represented by legal-tender money and the remaining two-thirds by bills of exchange maturing in three months or less and bearing the signatures of at least two solvent persons. Beyond that limit each bank was permitted to extend its issues provided a tax of five per cent be paid to the imperial government upon such excess. Each bank of issue is required to publish an account of

its condition in the *Reichsanzeiger* on the seventh, fifteenth, twenty-third, and last day of each month.

Depositors are protected in the same manner as noteholders, except that in this case no quotas are assigned and, consequently, no provisions regarding an emergency circulation required.

The profits of the Imperial Bank are distributed between the stockholders, the surplus fund, and the imperial government in the following manner: Of the total, a dividend of four and one-half per cent is first paid to the stockholders. Of the remainder, twenty per cent is set apart for a surplus fund until the amount aggregates one-fourth of the capital of the bank. The residue is shared equally between the stockholders and the imperial government until the share of the former amounts to eight per cent of their stock, after which the imperial treasury receives three-fourths.

The execution of the act of 1875 has been accompanied by considerable friction, but in the main it has accomplished the purpose for which it was passed. Only sixteen of the thirty-two banks of issue were willing to comply with the severe conditions necessary to make them a part of the imperial system, and the Bank of Brunswick alone refused to take advantage of the opportunity for reorganization offered by the new law. However, it was able to maintain its independence for a short time only, and ultimately followed the example of its sixteen neighbours. Since these first years the number of the banks of issue in Germany has continually decreased. Of the seventeen which ultimately complied with the imperial law, only eight continued to issue notes in 1891, and only six in 1900. The Imperial Bank has extended its branches rapidly, having established by 1895 two hundred and sixty-seven offices in different parts of the

empire. Thus as a result of the legislation of 1875 the German banking system has become highly centralized, there being in 1894 only ninety-six non-issuing private banks in the entire empire.

In Germany bank currency does not play so important a part as in England or the United States. The deposit system is growing at the present time, but has not yet reached large dimensions. The aggregate amount of uncovered deposits was estimated to be 1,400,000,000 marks December 31, 1899, while the bank-note circulation of the country at the same time amounted to 1,450,000,000 marks. The estimated coin circulation at the close of the year 1899 was 3,364,000,000 marks of gold, 147,833,333 silver thalers, and 597,500,000 marks of subsidiary silver.

4. The banking system of France.—The banking system of France resembles that of Germany in being centralized in a great institution which controls a large part of the entire business of the republic. This institution is the Bank of France. Its central office is situated in the city of Paris, and it has one or more branches in each of the departments. Since 1848 this institution has enjoyed a complete monopoly of the right to issue notes, and, owing to the comparatively slight development of deposit banking until very recent times, has on this account had the largest share of the entire banking business of the country.

The chief characteristics of this institution are due to its comparative freedom from legislative regulations pertaining to the details of its business, and to its close connection with the government. The limit to its note issues is fixed by law at 4,000,000,000 francs, and it is compelled to redeem its notes on demand, but the selection of its securities and the regulation of the cash

reserve is left to the discretion of its own officers. Its capital is also fixed by law, but the protection of depositors depends chiefly upon the management of the institution, for which also its own officers are responsible.

The relation of the bank to the government is such that it may be regarded as essentially a state institution, notwithstanding the fact that its capital is owned by private individuals, who also participate in its management. The ministry appoints its governor and two subgovernors, and the legislative department of the government is enabled to completely review its affairs on the occasions when it asks for a renewal of its charter and at other times, if it is desired. The fact that its capital is invested chiefly in public securities and that it serves as the financial agent of the government has given it a large interest in public affairs and made its good management and safety matters of great importance to the State. The manner of its foundation and the chief events of its history are, however, largely responsible for the feeling, which is general in France and widespread throughout the world, that it is in reality a state institution.

The bank was founded by the great Napoleon as a part of the financial machinery of the First Empire, and though it was not always favoured and protected during the period of the restoration, all the other French governments, whether imperial or republican, have treated it as a state institution. They have looked to it for assistance in times of financial exigency, and have aided it when disaster threatened. In 1830, 1848, and 1870 it furnished the government with much-needed funds, and in 1871 it managed the payment to Germany of the enormous indemnity imposed by the treaty which marked the close of the Franco-Prussian War. On several occasions, when the bank has been forced to the verge of bank-

ruptcy, the government has permitted it to suspend specie payments and has invested its notes with the legal-tender power. Such proceedings have furnished ample grounds for the feeling that the State is behind the bank and will not permit it to fail.

On account of the monopoly of note issues enjoyed by the Bank of France, independent institutions, either of a joint-stock or private character, have never had a free field for development. From time to time, when it has been temporarily deprived of this monopoly, such institutions have sprung up in the financial centres, only to be absorbed or driven out of existence subsequently by the renewal of its monoply. In recent times, however, conditions have greatly changed. The use of deposits as currency has been rapidly extended, and this branch of business has been absorbed chiefly by independent institutions, the deposits of four of which at the present time greatly exceed those of the Bank of France.

In December, 1899, the outstanding circulation of the Bank of France amounted to 3,937,894,690 francs. Its deposits subject to check at that time amounted to only 512,361,646 francs, of which over five-sixths were at the central institution at Paris, and the rest at the various branches. At the same time Professor Leroy-Beaulieu estimated the accounts current of the four leading independent banks of deposit at 1,057,000,000 francs, and this added to their deposits payable on demand made, according to his estimate, an aggregate of 2,040,000,000 francs in these four institutions. The circulation of gold coin at the close of 1899 was estimated at 40,530,000,000 francs, of full legal-tender silver at 1,830,500,000 francs, and of subsidiary silver at 270,000,000 francs.

5. The Canadian banking system. — The banking system of Canada is in marked contrast to the highly

centralized systems of France and Germany on the one hand, and to the excessively decentralized system of the United States on the other. In 1896 it consisted of thirty-eight large joint-stock banks, with an aggregate capital of $62,196,391, and with four hundred and eighty-three branch establishments located in two hundred and seventy-three different localities. The smallest capital possessed by any of these banks was $48,666, that being the capital of the Summerside Bank of Prince Edward Island, and the largest was that of the Bank of Montreal, amounting to $12,000,000. The average capital of the large banks is nearly $2,000,000, being about nine times as great as that of the average national bank of the United States. No one of these institutions occupies a position comparable to that of the Imperial Bank of Germany, the Bank of France, or the Bank of England. A considerable number of them, on the contrary, stand upon a footing of equality.

All of these large banks enjoy the right of note issue under regulations which render the noteholders absolutely safe and at the same time permit the greatest possible elasticity. Each is permitted to issue notes to the amount of its paid-up capital. These are redeemable on demand in coin at the chief commercial centres of each of the provinces and at such other places as the central government may designate, and the banks freely redeem the notes of each other. Noteholders have a first lien upon the assets of the bank, and the stockholders are held liable for unpaid debts to the amount of their capital. The notes of a bank which has failed draw interest at the rate of six per cent from the date of its refusal to redeem them on demand. This regulation makes them good securities for investment, and, on this account, readily salable to other banking

institutions or to private persons, and prevents their depreciation in the interval during which the affairs of the bank are being settled. In case the resources of the bank are insufficient to redeem all its outstanding notes, a fund of cash, raised by a levy upon all the banks, and amounting to five per cent of the total amount of notes in circulation, is on deposit with the government at Ottawa for the purpose of meeting any deficit. Any depletion of this fund is made good by a new assessment, which, however, cannot at any one time exceed in amount one per cent of the aggregate circulation. All the notes of a bank which has failed may be paid from this fund, and the other banks remunerated when its resources have been turned into cash.

Depositors do [not] enjoy the degree of protection from the Dominion legislature that is thought desirable in the United States and some other countries. There is no official inspection of banks in Canada and no legislation pertaining to reserves or the character of investments. Since the act of 1890 no new bank is permitted to organize with a subscribed capital of less than $250,000. There is no provision in this act, however, regulating the proportion between the capital and the debts of a bank. Depositors are equally interested with noteholders in the regulation imposing liability upon the stockholders for the debts of the bank to the amount of their stock. They also derive benefit from the regulations pertaining to the safety fund, in so far as these ensure mutual watchfulness and sound management. Since most of the large banks were founded by the provincial legislatures before the Dominion government took this matter in hand, their charters are not uniform and some of them contain regulations which provide additional protection to depositors. For example, the charter of the Bank of

Montreal, one of the oldest and largest of the Canadian institutions, forbids the contracting of debts by the bank to an amount in excess of treble the capital stock exclusive of the deposits, and forbids loaning upon real estate or mortgages. Many of the large banks maintain a system of inspection and supervision which is said to be as efficient as any conducted by public officials.

The Canadian banks are closely connected with the financial system of the United States through agencies conducted by representatives in the city of New York. The foreign exchange of the country is negotiated through that centre, and in various ways the connection between the two systems is of mutual advantage. Canadian banks also maintain similar connections with England through agencies established in the city of London.

According to the statement of the condition of the banks made April 30, 1900, the total amount of deposits at that time was $100,500,000, and the amount of notes in circulation $43,908,432. The gold circulation was estimated at the same date at $21,000,000, and that of subsidiary silver at $5,000,000. In addition there were in use on the same date Dominion notes, redeemable on demand in gold, to the amount of $24,600,000, a large proportion of which constitutes a part of the cash reserves of the banks.

6. Banking in other countries. — Besides those of England, France, Germany, the United States, and Canada, no banking systems have been developed in any part of the world worthy of being described as types. Every country, however, has some sort of a system, developed sometimes independently, but frequently patterned in many respects after some one of those already described. The features of the English and German systems have been most frequently copied. The system

most commonly found is that consisting of a national bank with branches, controlled directly or indirectly by the central government, and possessing either a monopoly or a major share of the note issues. In most countries, besides this national bank, are to be found private and frequently joint-stock institutions whose business is chiefly confined to the discounting of commercial or agricultural securities. A few instances may be cited by way of illustration:—

Austria-Hungary possesses a strong national institution, called the Austro-Hungarian Bank, which has thirty-four branches in Austria and two in Hungary, and which enjoys a monopoly of note issues. Private and joint-stock banks situated in both parts of the empire transact a large proportion of the deposit business. These institutions, however, are closely connected with the Austro-Hungarian Bank by means of the clearing-house system conducted through clearing institutions located in Vienna, Budapest, Prague, and Brün. No bank is permitted to belong to these associations which does not have an account with the Austro-Hungarian Bank, and all balances are paid by transfers upon the books of the national institution.

Italy has a national bank, which, however, shares the right of note issue with two other large institutions, namely, the Bank of Naples and the Bank of Sicily. Each of these has numerous branches, and share between them the greater part of the banking business of the country.

Denmark, Norway, and Sweden also present good illustrations of the combination of strong national banks with joint-stock and private institutions. The national bank of Denmark has four branches and enjoys a monopoly of note issues. In addition there are in this country

sixty-nine private banks, with an aggregate of capital and deposits in excess of that of the national institution. In Sweden there is a national bank with nine branches, which shares the right of note issue with a number of private institutions, many of which have numerous branches. A recent law, however, provides for the assumption of a complete monopoly of note issues by the national bank in 1904. In 1898 there were also in Sweden thirty-six joint-stock banks. Norway possesses a national bank with twelve branches and a monopoly of note issues. It seems to be the policy of this institution to establish branches in each of the circles of the kingdom. Private banks play a smaller part in this country than in either Sweden or Denmark.

South America presents us with a number of interesting illustrations of experimentation in the banking business, although none of the states have developed stable systems. In many of them the most important part of the banking business is conducted by foreigners, especially by Englishmen.

All the national banks of Europe, and indeed all the important banks in other parts of the world, are in direct business relations with the city of London through accounts established there with correspondents. There are sixty or more institutions in this city engaged exclusively in the business of international banking. These have branches in various parts of the world and act as correspondents for banks in every country. This fact constitutes the city of London the real centre of the world's banking system, and the Bank of England its controlling institution. Through the connections thus established every part of the banking system of the world is connected with every other part, and the whole con-

stitutes a means of conducting exchanges of enormous magnitude and remarkable efficiency.

7. The relative advantages of the different systems.— The different banking systems described above are variations of two main types which are in marked contrast to each other. The one is the free-banking system, characterized by numerous independent, competing institutions, and the other is the privileged system, characterized by a great central institution under direct State control and sometimes under direct State management, endowed usually with a monopoly of note issues, with the exclusive privilege of keeping the government deposits, etc., etc. The latter system is all but universal in Europe, and at present the tendency seems very strong in the direction of its complete establishment in all places where it now finds only partial application. The free-banking system, on the other hand, is best represented in the United States and Canada. In favour of the former system the following arguments are employed:—

(1) It is said that the equipment of the community with money is a function of sovereignty, and since bank-notes perform all the functions of money, it is quite as important that the State should issue these as that it should manufacture coins.

(2) Strong, centralized banks with exclusive privileges are in a position to render extraordinary services to the State in times of exigency, and to render great assistance to the government in the performance of its regular financial duties.

(3) Through a strong, privileged institution, with numerous branches all over the country, it is possible to exert a control over discounts and over the movements of the precious metals which is quite impossible under the free-banking system. By raising and lowering the

rate of discount such a bank is able to increase or decrease its reserves almost at will, and frequently to check or expedite movements of gold to and from the country.

(4) It is further claimed that in banking, as in every other branch of business, great economies and better management are possible when the business is concentrated and conducted on a large scale than when it is performed by numerous small, competing institutions. A large bank with branches in all important commercial centres is also able to distribute the bank capital of the country according to the relative needs of different localities and thus to avoid waste. Such a large institution, it is also said, is more apt to attract talent and to train up an efficient service than is a small local institution.

(5) It is further claimed that public opinion is able to exert an influence upon such an institution more easily than upon a large number of independent banks. This is believed to be a great advantage, especially in times of financial stress and difficulty.

In regard to the first of these arguments, it should be noted that the reason for the concentration of the right of coinage in the hands of government is the fact that the community needs to be assured of the honest conduct of this business. Since individuals are not able to test the metallic content of coins, some guarantee of their weight and fineness is needed, and it is because States are able to give this guarantee better than any private corporation that the business of coinage is regarded in modern times as a function of sovereignty. With bank-notes the case is quite different. The systems of issue in force in Canada and the United States give to the holder of such notes quite as much assurance of their convertibility into coin on demand as do any of those under which

notes are issued by a single privileged institution. It is, therefore, not at all necessary that bank-notes should be issued by governments in order that they may perform with perfection all the functions of money.

There can be no doubt about the value of a great privileged bank to the State in ordinary as well as extraordinary times. The banks of England, France, and Germany have repeatedly loaned money to their respective governments on occasions when such loans were greatly needed and difficult to obtain elsewhere, and they have performed the functions of holder and disburser of government funds in a commendable manner. This advantage, however, is necessarily accompanied by a disadvantage which perhaps more than outweighs it. The close connection which necessarily exists between the government and these privileged banks makes it possible for the State to use such institutions for its own purposes and frequently to compel them to neglect the application of sound banking principles. At times nearly every one of the great State banks of Europe have been forced into severe financial difficulties on account of their inability to resist the influence exerted upon them by the government, and history would seem to justify the conclusion that they are more apt to indulge in questionable banking practices than well-managed independent banks.

It is certainly a great advantage to be able at times, by means of varying the rate of discount charged by a great privileged bank, to control the discount market and through it the movements of the precious metals. Such a control it is impossible to secure under the free-banking system, where no one institution is able to exert a controlling influence over the others. However, this advantage also must be purchased with a corresponding disadvantage. The regulation of the rate of discount

from a central institution is apt to involve a frequent disregard of local needs and local interests. Rates of discount ought to vary with the nature of the industries of different localities, and any attempt to enforce a common rate is apt to discourage enterprise in some quarters and over-encourage it in others. It is not, of course, necessary that a central bank should enforce a common rate, but recent experience, especially in the case of the Imperial Bank of Germany, seems to indicate a strong tendency in that direction.

The advantages of business on a large scale are not necessarily confined to the privileged institutions. A number of large competing banks with numerous branches is able to secure quite as economical a distribution of capital and equally able employees as a great privileged institution. Indeed, it is probable that a number of large competing institutions will tend to develop a more skilled and efficient service than a great institution which possesses a practical monopoly. Political influences are apt to be felt in the appointments of the State bank, and even when a good civil-service system which prevents favouritism is in existence, bank officials are apt to be influenced in their policy by considerations of a political character which are foreign to the economic interests of the country and to the real nature of the banking business. So far as the influence of public opinion goes, it is doubtless true that it operates with greater efficiency upon a State bank than upon numerous competitors. It should be observed, however, that the influence of public opinion regarding bank questions is not always to be relied upon and should sometimes be resisted. There is little doubt that independent banking institutions are less apt to be misled by so-called public opinion than State banks.

As special advantages of the free-banking system may be mentioned the following points:—

(1) It promotes the easy development of the banking business, and thereby the steady growth of industry and commerce. The history of banking shows that the interests of commerce, especially in the smaller communities, are apt to be neglected or only slowly recognized by privileged institutions, whereas under a free-banking system local banks have sprung up with much greater rapidity. This fact is illustrated in the banking history of France and England, and in particular in that of Norway, Denmark, and Sweden.

The development of banks of issue naturally precedes that of banks of deposit. When, therefore, issues are monopolized by a central institution, which is slow to establish branches in all parts of the country, banking institutions with the right simply of deposit and discount are apt to develop slowly.

(2) Independent banks developed by local needs are also more apt to completely satisfy those needs than an institution situated elsewhere. In France the fact has often been noted that a successful private institution would flourish in localities where a branch of the Bank of France could only be conducted with loss. This is evidently due to the fact that an institution controlled from Paris by men who are necessarily unfamiliar with the needs of a particular locality and out of touch with its business interests cannot appeal to local business men, and is not in a position to render them the same service as a bank established by local capital and controlled by men intimately acquainted with every department of the business activity of the region. While it must be admitted that such local banks are more responsive to local needs in ordinary times, it cannot be denied that

they are less apt to be serviceable in times of crisis or monetary stringency. On such occasions private institutions are apt to look after their own affairs and to refuse accommodations to the public at precisely the time when they are most needed. Great State institutions under government management, and possessing the unlimited confidence of the public, are able at such times to render great services.

A comparison of the relative advantages and disadvantages of the free-banking and privileged-banking systems leads one to the conclusion that neither of them is superior to the other in all respects. It would doubtless be a great mistake to attempt to introduce the free-banking principle into communities in which the other system has long been established and is in successful operation. It would be quite as fatal to introduce centralized State banks in such countries as the United States and Canada, where the free-banking system has developed its own peculiar advantages. It is possible under either system to adopt certain modifications which will enable a community to enjoy many of the advantages of the other. A banking system must of necessity be a growth and will serve its community best when it has been developed and modified by experience.

In regard to the various systems of note issue, it should be said that the balance of advantage seems to lie with that in force in Canada. Every one of the other systems suffers to a greater or less degree from inelasticity, and thus at times is unable to meet the legitimate demands made upon this part of the currency. Every community must depend largely upon its bank-note system for the adjustment of its currency to the varying needs of the different localities. For example, in the United States, when the crops are moving, there is an

extraordinary demand for currency in the South and West. At such times the ability of banks to issue notes against securities would be a great advantage. Such notes retire themselves when the exigency which calls them into existence has passed, and are rarely the occasion of an increased demand upon the bank's reserves. The same may be said of increased note issues in times of crisis. On such occasions there is an extraordinary demand for loans, and other forms of credit currency are apt to disappear from circulation. If banks can then extend their issues against securities, the gaps in the currency can be filled up, and the excess of notes is certain to return to the banks in the form of deposits or as payments for loans as soon as the crisis has passed, and without serious demands upon the banks' reserves. In most countries the limit placed upon the uncovered issues of banks is so low as to make expansion in ordinary times difficult, if not impossible. In Germany, for example, where ample provision is made for the expansion of note issues in times of crisis, the limit of the uncovered issues is so low that nearly the full quota is in circulation all the time, and any increase to correspond with the seasonal fluctuations in the currency is thus rendered impossible. In England and the United States the bank-note systems are extremely inelastic, and in the former country serve only the purpose of giving the community a choice between coin and bank currency for certain monetary purposes. In Canada, on the other hand, the issue of bank-notes is left to the discretion of the banks, while at the same time ample provision is made for their safety and for their constant convertibility. The result is that the quantity in circulation in that country varies from time to time in accordance with the needs of the country as a whole, and in different

localities as local needs vary. Great as are the advantages, however, of this system, it would probably be difficult to employ it in a country like the United States on account of the responsibility which it places upon the stronger banks for the conduct of the weaker. It would doubtless be possible and very advantageous, however, to modify our system so as to encourage the development of branch banking and the basing of note issues upon general assets, combined perhaps with a safety fund of much less magnitude than the Canadian.

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CHAPTER XI.

BANKING MACHINERY AND METHODS.

In order to complete our account of the processes by which bank currency performs its various functions, and of the influences by which it is regulated, it is necessary to discuss the methods by which exchanges between banks are effected. To this end we will describe the functions of bank correspondents, certain uses of branch banks, clearing-houses, and bills of exchange.

1. **Bank correspondents.**—In connection with the description of drafts it has already been remarked that business in distant places is often transacted by means of correspondents who act as agents for banks in other towns or cities. In the United States, for example, a bank usually employs a correspondent in the chief commercial city of the state in which it is located and one each in New York, Chicago, and the chief commercial centres of Europe, such as London, Paris, and Berlin. The function of the correspondent is to conduct the out-of-town exchanges for its principal, and may be illustrated in the following manner:—

The customer of a bank brings for deposit all the checks and drafts which he receives from various parts of the country as well as from business men in his own city, and, after proper endorsement, is credited with the amounts they represent. The bank then assorts these documents and sends to its various correspondents those which are payable in their respective localities. Before

mailing them it stamps upon the back of each an endorsement by which it makes them payable to the correspondent, and makes an entry of the transaction on its books in the proper places. When these checks and drafts are received, the correspondent credits its principal with the amount, and sends each document to the bank upon which it is drawn, provided it is in correspondence with this bank. Otherwise, after reendorsement, they are sent to other banks to which payments are due, and by them to the bank upon which it is drawn, in each case, of course, proper entries on the books and proper adjustments between the accounts of the various banks being made.

By way of illustration, let us suppose that a bank in the city of Madison, Wisconsin, has as its New York correspondent the Corn Exchange National Bank. Suppose further that John Jones of Madison receives from Richard Dow of Ithaca, New York, a check for $100 in payment for certain goods, which check, drawn, of course, upon an Ithaca bank, he deposits to his credit in the above-mentioned institution. After crediting Jones with the amount, and making the proper entries in its account with the Corn Exchange National Bank of New York, the Madison bank sends this check to its correspondent. In case the Ithaca bank also uses the Corn Exchange National Bank as its correspondent, such check will probably be sent directly to Ithaca. In case this particular New York bank is not in correspondence with the Ithaca institution, the check will probably be transferred by endorsement to some other bank and finally to the Ithaca bank's correspondent, by which it will be returned to the place of issue, and finally to Richard Dow himself. It is not necessary that the check or draft should follow precisely this route. It may be sent to

various other institutions before it reaches the correspondent of the Madison bank, and may again pass through various hands before it reaches Ithaca, but, in any case, it will be used as a means of adjusting accounts between the various banks, and thus of balancing the debts of various regions.

It is not necessary that a bank should have a correspondent in every place in which it wishes to do business. Provided a sufficient number of connections are made to enable it to dispose of all the checks and drafts received from its customers, no others need to be established. Banking connections are so thoroughly developed in all the great commercial countries of the present day that a few correspondents located in the great commercial centres are sufficient for the needs of most local institutions.

2. The branch-bank system. — The establishment of branch banks diminishes very much the number of correspondents which an institution needs to have, and may make it possible to entirely dispense with them. If a bank establishes a branch office in all or most of the localities in which it has occasion to transact business, it can issue its drafts and send its checks to its own branches instead of employing other banks to act for it. To what extent this system dispenses with correspondents depends, of course, upon the number and distribution of the branches. Branch banks are rarely established simply for the purpose of serving as a means of transferring funds from one part of the country to another. They are designed primarily as a means of extending the parent bank's business, and their use as an intermediary in the exchange of checks and drafts is, thus, secondary, but none the less efficient. Where branches do not exist, correspondents can, of course, be employed.

The branch-bank system has been developed to a high degree in many foreign countries. In England, France, and Germany, for example, great centralized institutions have been developed which are the leaders in the commerce of their respective countries, and by means of their numerous branches are able to transact a large part of the exchanges of the country. In Italy, Austria, the Scandinavian countries, Holland, Belgium, and Canada, too, large banks with numerous branches are the rule. In all of these cases, however, foreign business is transacted chiefly through correspondents, the English institutions being the only ones that have extended their branches to any considerable extent outside of the home country.

In the United States the branch-bank system is not widely extended, indeed is scarcely employed at all. Instead we have a very large number of independent institutions, and the system of conducting the domestic exchanges by means of correspondents is consequently generally used. The branch-bank system possesses very many advantages, particularly in the direction of furnishing banking facilities for small towns and sparsely settled regions, and it seems probable that the future will witness a considerable extension of this system even in the United States.

3. Clearing-houses.—On account of the operations which have just been described every bank finds itself each day in the possession of checks, drafts, and bills of exchange payable by or collectible through the various other banks of the city in which it is located. Originally these collections were made by sending out clerks for the purpose of receiving the money due from other banks and of delivering to them the checks and drafts drawn against them or their correspondents. This method of

procedure, however, proved to be very uneconomical and in some respects dangerous. A little army of bank clerks carrying considerable sums of money about the streets of a great city during certain hours of the afternoon furnished an unusual opportunity to thieves, and imposed a great problem upon the police authorities. Another defect of this method of procedure consisted in the great loss of time which it involved. The distances which had to be traversed were sometimes very great in large cities in which the banking institutions were very far apart; sometimes the clerks had to stand in line for a long time at the desks of banks waiting for each other; and frequently they crossed each other's paths upon errands which could quite as well have been performed by one person as by two. At a time when they could least afford it the banks were also obliged to suspend other business in order to attend to these collections.

The remedy ultimately found for these difficulties was the clearing-house, the essential feature of which is a room conveniently situated, in which all the bank clerks meet every day at a specified hour for the purpose of exchanging securities. This room is usually furnished with desks, one for each bank, arranged in a semicircular or circular form. At a specified time each day the clerks deposit the checks belonging to each bank at the proper desks, and receive those drawn against the institutions which they represent. The clerk at each desk then prepares a balance-sheet by entering in debit and credit columns respectively the aggregate of the checks, drafts, and bills of exchange which his bank holds against each of the others and the amount which it owes to each. By footing up these aggregates he is able to determine the total amount due by or to his bank, as the case may be. These balance-sheets are then sent up to the central

desk, presided over by the master of the clearing-house, and accounts between the various banks are there settled, it being necessary simply for those from whom payments are due to pay the amount in one form or another to the master of the clearing-house, and for those to whom sums are due to receive the amounts from him.

The balances are paid now in one way and now in another. In some clearing-houses banks are required to pay in cash; in others they are permitted to carry accounts with the clearing-house; and in still others the balances are paid in drafts on some large institution which has extensive connections with all the banks in question, and which sometimes is the manager of the clearing system.

Rarely do all the banks in a city belong to the clearing-house association. Those which are not members, however, are usually permitted to do their clearing through those which are. The same method is often pursued in the case of out-of-town banks, the clearings for which are usually performed through their respective correspondents, each member of the clearing-house association transferring to the others not only the checks and drafts which are drawn directly upon them, but also those which are drawn upon their various out-of-town correspondents or upon those banks within the city which do their clearing through these particular institutions. By this method practically all the exchanges of a city and its connections in various parts of the country pass through the clearing-house.

The advantages of the clearing-house system are obvious. An enormous amount of time and expense is saved to all the banks, the danger incident to carrying large sums of money about the streets is obviated, and the commercial statistics collected are extremely useful

not only to banks, but to public officials, economists, etc. These statistics indicate the magnitude of the business transacted through banks, and are thus a key to the explanation of certain economic phenomena of great political and social as well as commercial importance.

4. The development and extension of the clearing system. —The employment on a large scale of this extremely useful device for the transaction of domestic exchanges belongs to very recent times. The oldest clearing-house in existence is doubtless that of the city of London, which was founded in the year 1775. The New York clearing-house, the next oldest, dates back to 1853. Most of the others are of very much later, indeed of comparatively recent, origin. The clearing system may, therefore, be said to be in its infancy, and an extensive development along this line is quite certain to characterize the immediate future. It is most widely extended and perfected in the United States. At the present time there are more than one hundred clearing-houses in this country, with a total membership of considerably more than one thousand banking institutions. The centre of the system is in New York City. Nearly every bank in the country has a correspondent there, and, on account of its great commercial importance and the peculiarities of our national banking system, a large proportion of the financial transactions of the country there take place, the amount of paper which passes through the New York clearing-house annually constituting more than one-half of the total clearings of the entire United States for the same period. The extensive use of the system here is explained in part by the high development of the business of deposit banking in this country and by the fact that we lack a centralized banking system like that of England, France, or Germany. Most of our banking institutions

being local and independent in character, some means of associating them becomes necessary, and the clearing-house has proved useful to that end.

The clearing system in the United States has developed certain peculiarities which deserve mention, and which are doubtless explained in part by the facts already described. The clearing-houses are supported and established by voluntary associations of bankers, and, owing chiefly to the absence of a dominant institution, they are employed for various other purposes besides that of making exchanges, for any purpose indeed for which community of action on the part of the banks in question is desired. Among the special services which they have rendered may be mentioned the granting of loans to the United States government on one or two important occasions, the introduction of uniformity in rates of interest on deposits, in rates of exchange, and in charges on collections, and the issuing of clearing-house loan certificates. By their power to expel unworthy members from the association and to refuse to do business with banks that persist in faulty or dangerous practices they have also exercised an elevating and controlling influence over the entire banking system of the country.

In England the bankers' clearing-house of the city of London constitutes the centre of the clearing system of the British Isles. Practically every bank in England, Scotland, and Wales has a London correspondent through which, directly or indirectly, its paper reaches the clearing-house. The statistics of that institution are, therefore, indicative of the magnitude and fluctuations of the business of the whole country. There are local clearing-houses in the most important cities of the kingdom, but the number is not so great in comparison with the population as in the United States.

In continental Europe the system is being quite rapidly extended at the present time, but is of comparatively recent origin. It was not until the year 1884 that any considerable number of clearing-houses were established in the German Empire, the Imperial Bank, through its various branches, being in a position to economically conduct over its own counters a large proportion of the exchanges of the empire. Since 1884, however, it has been extended to include the most important banks. In Austria-Hungary the system dates back to 1872, but has only extended itself widely during the last decade. The centre of the system is in the city of Vienna, and the leading rôle is played by the Austro-Hungarian bank. In France the system has not been extended outside of the city of Paris, which has had its clearing-house since 1872. The Bank of France with its numerous branches plays the same important rôle in that country as does the Imperial Bank of Germany within the territory of the German Empire. In Italy and the various other European countries, in Canada, Australia, the various other British colonies, and Japan the system has been introduced, and is being rapidly extended.

5. Bills of exchange.—In previous pages bills of exchange have frequently been mentioned as the most convenient and safe form of bank investments. As one of the most important parts of the machinery by which exchanges between different cities and different countries are effected through the agency of banks, a somewhat detailed description of them is now desirable. To this end it is necessary to discuss first of all the method of balancing the mutual indebtedness of commercial centres.

A. *The balancing of the mutual indebtedness of commercial centres.*—Between all commercial centres there is a constant flow of goods. Chicago merchants, for

example, are daily making purchases in New York which are to be shipped to Chicago, and at the same time are making sales to New York merchants which are to be shipped from Chicago. Londoners are making daily purchases as well as sales in New York. The streams of commodities thus constantly flowing from one place to another give rise to an enormous quantity of debits and credits between different places which in some way must be settled. The New York purchasers must make payments to their creditors in London and Chicago, and London and Chicago debtors must make payments to their creditors in New York. The chief means employed in such cases are bills of exchange.

In order to make clear the precise nature of these instruments and the method of their operation, let us employ a hypothetical case. Suppose that Mr. Jones of New York ships to Mr. Smith of London a cargo of wheat for which he is to receive £1000, and that Mr. Roberts of London about the same time ships to Mr. Brown of New York an assortment of woollen cloths for which he is to receive £1000. The question is, how will Mr. Brown make his payment to Mr. Roberts, and Mr. Smith his to Mr. Jones? It would, of course, be possible for Mr. Smith to send one thousand gold sovereigns by express to Mr. Jones of New York, and for Mr. Brown of New York likewise to send one thousand gold sovereigns, or their equivalent in American gold coins, to Mr. Roberts of London. However, if this method were employed, there would be crossing the Atlantic at the same time in opposite directions two packages of gold sovereigns, a process which would involve a considerable expense in the form of express charges, insurance, and loss of interest upon two thousand gold sovereigns out of business employment for, perhaps, two weeks. Instead of making

his payments in this form, let us suppose that Mr. Jones draws a bill of exchange on Mr. Smith, ordering him to pay to Mr. Roberts £1000. This bill would read about as follows:—

"*To Mr. Smith of London:*

Thirty days after sight please pay to Mr. Roberts One Thousand Pounds (£1000), and charge the same to my account.

(Signed) JONES."

Suppose now that Mr. Brown of New York purchases this bill of exchange from Mr. Jones, paying him therefor £1000. By endorsement he then makes it payable to Mr. Roberts of London, and sends it by mail to that person. When Mr. Roberts receives it he presents it to Mr. Smith, who, by the process of acceptance, assumes the obligation of paying it at maturity. When the thirty days have passed the payment is made. The bill of exchange has thus performed its function. Without the shipment of a single coin across the Atlantic, Mr. Jones has received payment for his wheat and Mr. Roberts for his woollens.

It is evident that the bill of exchange used in the settlement of these two transactions might equally well have been drawn by Roberts of London upon Brown of New York, and sold to Smith of London and transmitted to Jones of New York and by him presented to Brown for payment. So far as the nature of the transaction is concerned, it makes no difference which person draws the bill.

B. *Technical features and forms of bills of exchange.*— To every bill of exchange there must be at least three parties, the person who draws it, called the drawer, the person upon whom it is drawn, called the drawee, and the person to whom it is made payable, known as the

payee. Other requisites are the date and place of issue, the time of payment, the sum to be paid, usually expressed both in figures and in letters, the name and address of the drawee, the payee's name or description, the drawer's signature, and occasionally the place at which the bill is to be paid. Variations in these requisites constitute different varieties of bills. From the standpoint of the place of payment they may be classified as *inland* and *foreign*, the former being those payable in the country in which they are drawn, and the latter those payable in some other country. As regards the time of payment they may be classified as bills *at sight* and bills drawn *for a term*, the distinction being that the former is payable either on demand or upon its presentation to the drawee, while the latter is payable a certain number of days or months after date or after its acceptance by the drawee. This latter class is sometimes subdivided into so-called *long bills* and *short bills*, according to the length of time intervening between the date or acceptance of the bill and its payment, those payable within a few days after date or sight being known as short bills, and those payable in thirty, sixty, or ninety days as long bills.

Bills may be drawn in such a form as to render them non-transferable and non-negotiable, in which case they must be made payable to specifically named persons and to them alone, and are known as *special* bills. Ordinarily they are drawn payable to order, and are transferable by endorsement, the usual form of which is a statement like the following written upon the back of the bill: "Pay to Messrs. G. & Co." or "Pay to Messrs. G. & Co. or order," and signed by the payee. Other forms of endorsement are distinguished as *special*, *restrictive*, and *blank*. A special endorsement directs the payment of

the sum for which the bill is drawn to a certain person or firm, with or without leave to transfer. A restrictive endorsement is one in which use is made of certain special clauses, like "per procuration," "for my account," "for my use," employed for the purpose of giving notice that the person in whose favour the endorsement is made is merely a trustee of the endorser or his agent, and does not possess the right to transfer the bill to any one else. A bill is said to be endorsed in blank when the payee simply writes his name across the back. It is then transferable from hand to hand without further endorsement.

Another formality involved in the use of bills of exchange is that of acceptance. Before the payment of a bill drawn for a term can be enforced it must be presented to the drawee for acceptance. This is accomplished by the formality of writing or stamping the word "accepted" across its face over the signature of the drawee. The latter thus gives notice of his acknowledgment of the indebtedness and of his willingness to pay the bill at maturity. Frequently the drawee gives the bill a so-called qualified acceptance by specifying certain conditions, as, for example, that he accepts the bill for a certain specified sum only, or that he accepts it payable at a certain specified time, say three months from date, or on condition that it be renewed for a certain period of time, say six months, or that he be permitted to pay it in monthly instalments, or that it be paid at a certain place or bank and there only. When qualifying statements of this sort are added the process is technically known as a qualified acceptance.

C. *The obligations of endorsers.*—In order that bills of exchange may perform their functions, it is necessary that the rights and obligations of the different parties

to them should be carefully defined, protected, and enforced. To this end every nation has developed a body of special laws, with which dealers in bills must be perfectly familiar. For the purposes of this book it is necessary only to describe such features of these laws as are essential to an understanding of the nature and economic uses of these instruments.

To the parties to the bill of exchange mentioned in the preceding section should be added the endorser and the endorsee, who figure prominently in the laws pertaining to these instruments and who exert a considerable influence upon their value. The endorser guarantees to the endorsee that the bill, if payable after sight, will be accepted upon presentation, and that it will be paid at maturity, either by the acceptor or, in case of his default, by himself. On account of the liability thus assumed by endorsers, the element of risk involved in the possession of a bill of exchange decreases with the number of its endorsements. For example, a person who possesses a bill which has been endorsed many times has recourse for payment not only to the original acceptor and drawer, but to every endorser. In case, therefore, that the original parties to the bill are not financially sound, the endorsers, one and all, may be of so great financial stability as to render the bill first-class. The order of the liability of the endorsers is *prima facie* that in which they appear upon the bill, each subsequent endorser, in case he is called upon for payment, having recourse to all those whose names precede his, as well as to the original acceptor and drawer.

It is because of this peculiar characteristic that bills of exchange drawn for a term constitute such an excellent form of investment for banks. No sounder securities can be conceived than bills bearing numerous endorse-

ments which originated on account of an actual transfer of goods or other valuables from one part of the world to another. The sale of the goods or the employment of the values creates the means for the payment of the bill in the first place, and in addition to that the holder has recourse to all the endorsers in case of failure to pay on the part of the original acceptor. In order to throw a special safeguard about the banking business, many States, as we have already seen, require a certain number of endorsements on bills or notes in which banks are permitted to invest.

Inasmuch as the enforcement of the liability of endorsers is always conditioned upon strict conformance to certain legal requirements, it is necessary that all persons having anything to do with these instruments should be sufficiently familiar with the laws of the country in which the bill is payable to enable him to comply with all the legal requirements necessary to make possible the enjoyment of all the advantages which the bill in question is capable of yielding.

D. *The market for bills.*—In order to perform their function bills of exchange must be sold by those who draw them and purchased by persons who have payments to make in the places upon which they are drawn. In the illustration used in a previous section the exporter of wheat from New York received his pay by selling a bill of exchange upon his creditor, while the New York importer paid for his London woollens by purchasing a bill on London and sending it to his creditor. The negotiation of bills of exchange is, therefore, an important branch of business, and it is noteworthy that it is almost exclusively in the hands of bankers and a special class of middlemen known as bill-brokers. It rarely happens that a person who needs to make a payment in a distant

place attempts to find an exporter who has a bill of exchange on that place to sell. Instead, he buys a draft of his banker, who subsequently settles his account with the correspondent upon which the draft is drawn by a bill of exchange purchased on the New York market. Similarly, it rarely happens that the drawer of a bill upon a creditor in a distant place attempts to find a purchaser in the person of an individual who has a payment to make in that place. Instead, he sells it to a banker or a bill-broker. The function of bankers in the negotiation of bills, however, is chiefly that of investors. Except in the case of their own immediate customers, they usually purchase bills of bill-brokers, and either keep them until maturity as an investment or send them to their correspondents as a means of meeting debts or creating favourable credit accounts. The bill-brokers are, therefore, the real specialists in this line of business, and thus constitute the chief intermediaries between the drawers of bills and those who purchase them. By familiarizing themselves thoroughly with the financial standing of the various individuals and firms who offer bills for sale they are able correctly to estimate the amount of risk involved in their purchase, and thus become experts in distinguishing the good from the bad. Inasmuch as the purchasing broker must endorse a bill in order to transfer its ownership to a banker, the latter has the additional security of this endorsement, which, in the case of a firm with wide reputation, is a sufficient guarantee against loss from this form of investment.

The credit of the drawer of a bill is so important an element in its value that large firms of wide reputation and known financial strength have a great advantage in commerce on a large scale over small establishments of less reputation. From this fact, in part, it results that

business requiring settlement through bills of exchange falls chiefly to the large and strong concerns. It is often more economical for an exporter to employ a large commission house than to attempt to export directly, since he can make better terms with such a house than it would be possible to make with a foreign importer. On this account also it happens that most of the bills of exchange drawn upon foreign markets bear the names of large firms of international reputation. Inland bills, having a less extended circulation, are more liable to be drawn by smaller firms and less widely known persons.

For convenience in the negotiation of bills special market-places are sometimes established. In the city of London the so-called Royal Exchange answers this purpose. Formerly this building, of great antiquity, was a general meeting place for merchants of all sorts. In recent times, however, special classes of dealers have established independent exchanges in other places, and the Royal Exchange is now chiefly employed by the negotiators of bills of exchange. Twice a week, on Tuesday and Thursday, after luncheon time, there assemble in the courtyard of this building representatives of the chief bill-brokers of the city and of the great foreign banking houses. In a comparatively short period of time the transactions in foreign bills for the day are concluded, and from the bargains thus made the published reports of the rates of foreign exchange are compiled. Such exchanges are, of course, not necessary in places where the offices of bill-brokers are easily accessible to bankers and firms having bills for sale.

E. *The value of bills of exchange.*—Of the various elements entering into the determination of the value of bills of exchange, one has already been mentioned, namely, the credit of the drawer and acceptor. If the

merchant upon whom a bill is drawn is unknown or has the reputation of not meeting his obligations promptly at maturity, either because of dishonesty or inability, its sale will be possible only at a depreciated value, if at all. On the other hand, if both drawer and acceptor are known to be financially sound, this element of risk may completely disappear.

The chief elements entering into the value of bills are the cost of transmitting other forms of currency and the rate of discount. In payments to distant places, as we have seen, merchants have the option of sending cash or bills of exchange, and they choose the latter because it is cheaper. The cost of sending gold to a foreign country consists of freight or express charges, insurance fees, and loss of interest * during the time of transit. If a bill of the requisite face value can be purchased for any sum less than the cost of the gold with all these expenses added, a saving is effected by its use. Suppose the amount of the payment to be made in London is one thousand dollars, and the cost of shipping that amount of gold is one dollar. The New York importer can afford to pay for a bill of exchange any sum less than one thousand and one dollars, and this may, therefore, be regarded as the upper limit of the price of a bill for that amount. An exporter, on the other hand, who has the right to receive one thousand dollars in London, can either order his agent to ship him that amount of gold, which, when expenses are deducted, will net him nine hundred and ninety-nine dollars, or he can sell in New York a bill of exchange upon his London creditor. It is evident that he will adopt the latter method, provided he can sell such a bill for any sum above nine hundred and

* Frequently there are other expenses, such as mint charges, cooperage, and fees of various kinds.

ninety-nine dollars. This figure, therefore, represents the lower limit of the value of a one-thousand-dollar bill on London. Within these limits the value of bills fluctuates in accordance with the law of demand and supply. If the number of bills offered for sale is in excess of the number demanded, they will fall below par. If the number offered is less than those required on a particular day, their value will go above par. In no ordinary case, however, will the premium or the discount exceed the cost of shipping gold. When the transactions are between different points in the same country, the same principle holds, with the difference that in this case other forms of currency besides gold are available for shipment, and the cost is not, therefore, apt to be so great. In the United States, for instance, besides gold, one may ship silver dollars, bank-notes, greenbacks, Sherman notes, or silver certificates.

The rate of discount always enters into the value of bills drawn for a term. If a man offers for sale a bill of exchange which falls due in thirty, sixty, or ninety days, he cannot expect to receive for it so large a sum as he would if it were payable on demand. In fact, he will be obliged to sell it for its present worth, which is its face value minus interest upon it until the date of maturity. Time bills, therefore, are always of lower value than sight bills of the same quality. It should be noted also that the discount on time bills is usually reckoned at the rate ruling in the market upon which they are drawn rather than at that of the market in which they are sold. The reason for this is that the purchaser of the bill who holds it as an investment until maturity will receive the rate of interest ruling in the market upon which it is drawn rather than that ruling in his own market. Suppose, for example, a New York broker buys a three-months

London bill of the face value of one thousand pounds. This bill, being payable in London, will not be accepted by the drawee at a rate higher than that ruling in his own market, for the obvious reason that he would prefer otherwise to borrow the money and pay the bill at once. The purchaser of the bill will be unable to push its value below the point represented by this rate of discount, because otherwise the drawer would prefer to negotiate it on the foreign market at a higher price.

Various other facts need to be taken into consideration in estimating the value of bills, particularly those drawn on certain foreign cities. These special cases, however, may be best considered in connection with the subject of the foreign exchanges treated in the following chapter.

F. *Bills of exchange as currency.*—Notwithstanding the fact that their use is a very special one, bills of exchange constitute an important element in the world's currency. The fact that they are issued in irregular amounts and require endorsement every time they change hands, and, in the case of time bills, the constant change in their value as they approach maturity, prevent their extensive use in retail trade, but in the form of bank drafts they are the means ordinarily employed for making payments in distant places, and even ordinary trade bills sometimes serve as currency between great corporations and men who transact business on a large scale. In intercourse between banking institutions they are extensively employed for the purpose of paying balances, and for running up credit accounts for use in time of need. This is indeed their chief currency use, and it is of sufficient importance to merit mention side by side with their use as a form of bank investment.

REFERENCES.

The clearing systems of the most important countries are treated in the following books: Cannon's *Clearing-houses;* Howarth's *Our Clearing System;* Seyd's *London Bank and Bankers' Clearing-house System;* Easton's *The Work of a Bank*, ch. vii; Bolles's *Practical Banking*, pt. III; and Rauchberg's *Clearing- und Giro-Verkehr*. On bills of exchange and their use see Hutchison's *The Practice of Banking*, v. I, pt. III; Gambaro's *Lessons in Commerce*, ch. x; Easton's *Banks and Banking*, chs. xx–xxv; and the various treatises on commercial law, among which may be mentioned those of White and Spencer, which are well adapted for the use of non-technical students.

CHAPTER XII.

THE FOREIGN EXCHANGES.

In addition to many characteristics common to both the domestic and the foreign exchanges, the latter possess several peculiar features which demand special and independent treatment. Among these may be mentioned the fact that they involve the translation of the currency of one country into the terms of that of the other, the distribution of the world's supply of the precious metals among the various nations, and, frequently, interference with the regular course of international commerce in such a way as to seriously react upon industry.

1. The par of exchange.—The basis of all exchanges between countries is the so-called par of exchange, by which is meant the relative amounts of pure metal contained in their respective units of value. For example, the par of exchange between the United States and England is $4.866565 to one pound, since our dollar contains 23.22 grains of pure gold, and the English sovereign or pound sterling 113.0016 grains. Our par of exchange with Germany is 23.82 cents to one mark, the German mark containing 5.5312 grains of pure gold, and our par of exchange with France is 19.294 cents to one franc, there being 4.4802 grains of pure gold in the French unit. The par of exchange thus gives us the exact equivalence of one currency in terms of another, and is the basis upon which international contracts are made and the value of bills of exchange reckoned. We may illustrate its significance as follows:—

A New York commission merchant is directed to sell a cargo of wheat in Liverpool, and his principal informs him that he must receive at least one dollar a bushel net for it. How much in pounds sterling must he charge the English purchaser in order to realize that price in New York? Manifestly he must base his calculation upon the par of exchange between the two countries, though he will be obliged to take other matters into consideration as well. A New York importer orders woollens from London and agrees to pay therefor one thousand pounds. How much does that mean in the money of the United States, the medium with which he must purchase his London bill and in which he will be paid for these goods by those who buy them? Here again the par of exchange must be the starting point in the calculation, though the discount or premium on London bills will also need to be taken into consideration. In the previous chapter we explained the influence of the cost of transporting the precious metals and of demand and supply upon the value of bills of exchange. We must now note the fact that the price of a foreign bill is said to be at par when it brings the exact equivalent of its value as determined by the par of exchange with the country upon which it is drawn. If it brings less than this amount, it is said to be at a discount; if more, it is said to be at a premium.

In the case of transactions between countries having different standards of value, no par of exchange in the proper sense of that term can exist, because their units are defined in terms of different metals. For example, in exchanges between the United States and Mexico it is necessary to determine how much silver is the equivalent of a given amount of American gold, since silver is the standard in Mexico and gold in the United States.

The basis of exchange calculations in such a case must be the relative value of the two metals at the date in question, as well as the weight of the units as defined by law. If one of the countries has an inconvertible paper currency, calculations based upon the regular par of exchange must be modified to the extent that the paper is depreciated

2. The gold points.—In order properly to interpret the fluctuations in the value of foreign bills, it is necessary to note the so-called *gold points*, that is, the rates of foreign exchange which are likely to cause movements of gold between gold-standard countries. We might also properly speak of the *silver-points* if we were discussing exchanges between silver-standard countries. In this connection we need only to refer to the discussion of the value of bills of exchange in the previous chapter, and to apply the principles there laid down to the special case before us. It was there shown that in general the limits of the fluctuation of the value of bills, in accordance with the law of demand and supply, were fixed by the cost of shipping legal-tender money between the place where the bill is drawn and that in which it is payable. In the case of exchanges between gold-standard countries these limits are known as the gold points, for the reason that, if the price of foreign bills should rise above the upper limits as thus determined, it would be cheaper to export gold than to send bills for the purpose of settling international accounts, and, if it should fall below the lower limit as thus determined, it would be cheaper to import gold than to sell bills drawn upon foreign creditors.

By way of illustration, let us suppose that the demand in New York for bills upon London is so great that bankers are disposed to charge for them more than the

par of exchange plus the cost of sending gold. The demand for bills would be immediately checked, and gold would be exported. For example, assuming the total expenses involved in sending the gold to be two cents per pound sterling, a charge of $4.90 per pound sterling, or even of $4.89, would probably be sufficient to start a movement of gold from New York to London, $4.86⅔ being our par with England. On the other hand, if the supply of bills as compared to the demand were so great that bankers were unwilling to pay at least $4.84⅔ per pound sterling for them, New York exporters or other creditors would order gold shipped from London at their expense rather than sell bills at such a sacrifice. Thus, assuming two cents per pound sterling to cover all the expenses of procuring and shipping the metal, the gold-exporting point would be reached when bills sell at $4.88⅔, and the gold-importing point would be reached when they sell at $4.84⅔.

The flow of the precious metals between countries of different standards is subject to the same law, though in these cases the limits themselves change with fluctuations in the value of silver or in the depreciation of government notes. Suppose, for example, that according to the price of silver in the New York market to-day, the bullion value of one hundred Mexican dollars is fifty dollars in American gold, and that the total expense involved in shipping that amount of silver from the city of Mexico to New York is ten cents. If the price of bills on Mexico City rose above $50.10 per $100 Mexican, silver would be exported, and if it fell below $49.90, silver would be imported. Suppose further that one week from this date the price of silver bullion has fallen to such an extent that one hundred Mexican dollars can be bought for forty dollars of American gold, the expense

of shipping silver not having changed. The exporting point will then fall to $40.10, and the importing point to $39.90. It thus becomes evident that the rates of exchange between countries with different standards are subject to much greater fluctuations than those between countries possessing the same standard. In the latter case they are ordinarily held within the limits set by the expense of shipping coin, while in the former they are modified also by changes in the relative value of the precious metals and sometimes by fluctuations in the value of government notes.

In the determination of the gold points a very liberal interpretation must be given to the phrase *expenses of transportation of coin.* Ordinarily these include express or freight charges, insurance, interest, and a few minor items like charges for boxing, drayage, special fees, etc. But occasionally other items and sometimes very large ones must be added on account of a temporary and abnormal scarcity of the precious metals. The gold supply of a particular market may be temporarily *cornered*, or perhaps nearly or quite exhausted, and, in consequence, it may be almost impossible to get coin at any price. In this case the upper limit to the rates of foreign exchange would be temporarily removed, and they might rise to almost any height. If the gold were obtainable by payment of a high premium over its legal price, the upper limit would be raised to that extent. Indeed, under the head of expenses we must place every outlay that is necessary in order actually to put the gold into the hands of a foreign creditor, including the premium upon it, if one exists.

3. Influences which ordinarily determine the value of foreign bills.—The fluctuations in the value of bills of exchange within or even beyond the limits set by the

gold points are caused by a variety of influences which must now be particularized and described. In this section we will consider those which are operative in ordinary times and under ordinary circumstances.

A. *Trade influences.*—The most important of these are the regular imports and exports, the former creating the largest demand, and the latter the largest supply, of bills. In the New York market, for example, most of the bills on London are drawn against our exports of grain, cattle, minerals, and various manufactured products to England, and the demand for these bills comes chiefly from the importers of English goods. In the fall and early winter, when our exports are relatively large, the price of London bills is, therefore, apt to be low, and in the seasons when imports predominate it is apt to be high. This would always be the case, if many other influences did not tend to counteract that of imports and exports. The price of London bills is affected by our trade with other countries, it being customary to send bills on that market in payment of imports from many other parts of the world, especially from the English colonies, and to draw bills against the London correspondents of firms situated thousands of miles from that city. This practice is explained by the extensive commercial connections of English merchants and especially of the London banking houses.

In estimating the influences of trade upon the exchanges, freight, commission, brokerage, and insurance charges must not be overlooked. Inasmuch as these are separate items of expense payable to different individuals and firms, special bills are purchased and drawn in connection with them. Whether they exert their influence on the demand or the supply side, however, depends upon the nationality and location of the firms who do

the business. On the New York market freight charges figure chiefly on the demand side of London bills, since a large part of the ocean carrying trade is in the hands of English ship-owners, who receive their pay in London bills. The great German transportation companies also have a large New York business which influences the demand for German bills. The same principle holds with the other expenses involved in modern commercial processes. If foreign commission houses act as intermediaries in our international trade, their charges increase the demand for foreign bills; if domestic firms transact this business, their payment does not affect the foreign market, and if they transact business for foreign houses, their charges increase the supply of foreign bills. These various minor items are of the greatest significance in the interpretation of the London exchanges owing to the size of the English merchant marine, which does a large part of the international transportation business of the world, and to the extensive development of the commission and marine-insurance business in England. Should a large share of these various branches of industry be transferred to capitalists of the United States in the not distant future, as now seems probable, the rates of foreign exchange on the New York market will be affected thereby.

B. *The influence of international commerce in securities.*—The corporate form of industrial organization at the present time dominates the industrial world, and is responsible for the existence of an enormous mass of industrial securities in the form of stocks and bonds of many varieties. Add to these the credit documents which represent the huge public debts of the various nations, states, municipalities, and other political divisions of the world, and the aggregate reaches a figure so large as to

be almost incomprehensible. The greater part of these securities are negotiable, and for their purchase and sale markets have been developed in all large commercial centres, many of which are international in their character. Indeed no markets are more cosmopolitan than the great stock exchanges of New York, London, Paris, and Berlin. On these are listed the chief industrial and public securities of the different countries of the world, and by means of the telegraph and telephone international transactions are of daily occurrence. Like ordinary imports and exports, the settlement of these accounts is accomplished through foreign bills, and accordingly they must be included among the influences which affect the rates of exchange.

The London Stock Exchange will best serve as an illustration, since its international dealings are most extensive and frequently influence the exchanges in every part of the world. Its lists contain the names of more international securities than those of any other market, and it is the chief means through which English capital is invested in every country in the world. Suppose an English capitalist wishes to invest his money in the New York Central Railroad, or in some other enterprise in the United States. He will apply to a London broker, who will cable some member of the New York Exchange to secure for him the desired stocks or bonds. When the purchase has been made the New York broker will draw a bill on London for the amount due him, including his commission, and will sell it to a banker or a bill-broker like any other merchant. The bills thus drawn against securities purchased for Englishmen swell the supply which results from the regular exports and help to lower the rate of exchange on London. If Americans were to invest money in English enterprises,

the payment for the securities sent them would create a demand for London bills, and thus tend to raise the rate of exchange.

Besides the transfer of securities from one country to another, representing more or less permanent investments of capital, the business of the stock exchanges includes speculative purchases and sales on foreign account. The magnitude of these is sometimes very great and their effect upon the price of bills marked. An Englishman, for example, may deal in American futures through a New York broker. This amounts to betting on the price of certain securities on a certain date in the future, but takes the form of purchasing stocks or bonds for delivery at some future date with the option of paying or receiving the difference between the price agreed upon and that which rules on the market at that date. In case the Englishman wins, his margin will be paid by means of a bill on London. If he loses, the New York broker will draw on him for the amount due, and sell the bill on the New York market. In the one case the demand for London bills is increased, and in the other the supply.

Under this head may also be included payments of interest and dividends to foreigners, since these are based upon the transactions which we have just described. To the extent that foreigners hold American industrial or public securities, they are entitled to receive the interest and dividends due upon them, and the payment of these increases the demand for foreign bills in the New York market and thus raises the rate of exchange. On the other hand, payments to our people on account of interest or dividends due on foreign securities would increase the supply of bills and lower the rate of foreign exchange on the markets from which the payments were due.

The aggregate of these various influences may entirely obscure the normal effects of imports and exports. When, considering the latter alone, we should expect the rate on a particular market to be low, it may be high, and *vice versa;* or it may be much higher or lower than we would expect from an observation of the trade influences alone. On some occasions the influence of dealings in securities may dominate a market, and on others they may be insignificant. In no case, however, can they be disregarded with safety.

C. *Bank influences.*—Under this head belong a number of bank transactions by which the foreign exchanges are sometimes profoundly affected. Among these, we shall consider the accumulation of credit or debit balances, arbitrage transactions, purchases for investment, and travellers' checks.

International bankers frequently permit their correspondents to accumulate large balances to their credit, upon which a small rate of interest is paid, or to run up debit balances, upon which interest is charged. In the one case the process consists in the purchase of bills and their sale to the foreign correspondent on account, and in the other in the drawing of bills against the foreign correspondent in excess of the balance due. New York bankers regularly indulge in these practices. During the fall and early winter, when exports are heavy and the supply of London bills is large, they buy freely and send to their London correspondents, thus accumulating large credit balances. In the winter and spring, when the supply of trade bills is short and the rates correspondingly high, they sell drafts upon their London correspondents sometimes greatly in excess of the amounts due them, thus overdrawing their accounts. It is evident that these transactions have an influence upon the rate of exchange,

the demand for bills being increased when the debit balances are being covered and credit accumulated, and the supply being increased when accounts are being overdrawn. The effect upon the New York market is to check the tendency of the rate on London to rise during one period of the year and to fall during the other.

It is not necessary, however, that influences of this sort should be exerted periodically or regularly. They may appear at any time and may be a disturbing as well as a regulative force. In case an unexpected demand for foreign bills sends up the rates to the gold-exporting point or beyond, the banks may employ this resource as a means of restoring normal conditions. Sometimes, however, the settlement of balances may be unexpectedly called for, in which case the purchase of trade bills on the open market or the shipment of gold are the only alternatives. The rates may then be forced up to abnormal heights and even the exportation of metal be rendered necessary.

Arbitrage transactions are those undertaken for the purpose of realizing profits from the difference in the rates of foreign exchange on different markets at the same time. For example, the Berlin rate on London may be low at the same time that the Paris rate on that market is high; and the difference may be great enough to enable the French bankers to earn a handsome profit by selling Paris bills on London and covering their accounts by means of German bills purchased by their Berlin agents and sent to their London correspondents. The success of such a transaction depends also upon the rate between Paris and Berlin, or upon the ability of the Paris bankers to make suitable arrangements in the German capital for the purchase of London bills. Opportunities of this sort are frequently created by fluctuations in international

commerce, especially by those which cannot be foreseen. An unexpected demand for London exchange in Paris may create them, and this might be caused by unusual importations of English goods, by transfers of English securities to French investors, or by speculation on the stock market. Unexpected news, such as the outbreak of a war, or the death of a ruler, or even an unfounded rumor, may so affect a particular market as to create an opportunity for arbitrage transactions. The ordinary vicissitudes of commerce, such as are created by fluctuations in the output of the productive agencies of the world, are, however, the most potent influences in this direction. The American wheat crop may prove to be much greater than the estimates, and accordingly the unexpected increase of exports may temporarily depress the New York rate on London and make it profitable for foreign bankers to purchase a portion of this surplus supply of bills as a means of covering debit balances created by the sale of bills in their own markets at higher rates. The temporary stoppage of a stream of commerce by means of a great strike may also create a similar condition.

The general tendency of transactions of this kind is to equalize the rates between the different markets, and to establish a sort of equilibrium, which, however, is being constantly disturbed by the recurrence of such events as have been mentioned.

The bills of exchange which a banker holds as an investment need not necessarily originate in the home market. If the local supply is inadequate, he may make purchases on another market, even in a foreign country. London bills are frequently purchased by Continental bankers for this purpose. If domestic trade is slack and an unnecessarily large cash reserve accumulates, the

surplus may profitably be invested in this way. In case of need these securities can easily be disposed of, and otherwise the bank draws interest on them until the date of maturity. Whenever bills are purchased for this purpose, the rates of exchange are affected quite as much as by a purchase of the same magnitude for the payment of foreign debts or for any other purpose. In the nature of the case this investment demand for bills is irregular and difficult to estimate. If the banking capital of a country is properly distributed and not too large, local paper ought to suffice, except under unusual and extraordinary circumstances.

The influence of travellers' checks upon the exchanges is quite as direct as that of imports. They are used in the payment of hotel bills, railway and steamboat fares, purchases of souvenirs, etc., and, so far as their effect upon the exchanges is concerned, are essentially equivalent to the purchase and consumption of imported goods at home. They figure on the demand side of the account in the home market, and tend to raise the foreign rates. We may illustrate their effect in the common case of an American travelling with a circular letter of credit purchased of his home banker. Suppose a hundred pounds be drawn on such a letter in the city of London. The banker who pays the check will debit the amount on the account of the American bank which issued the letter, and the latter will probably settle it in the ordinary way by buying a trade bill and sending it to its London correspondent. If the equivalent of fifty pounds is drawn in French money from a Paris banker, the latter will debit the London correspondent named in the letter, and he, as before, the American bank. The settlement in this case will require a transfer of credits from London to Paris as well as from New York to London. Bills of

exchange will be the instrumentalities employed, and the effect will be to raise the New York rate on London and the London rate on Paris.

This influence is especially strong in the spring and summer months, when the largest amount of travel for pleasure takes place, and is most marked on the New York-London rate. Americans travel very extensively and are reputed to spend more money abroad than the people of any other nationality. The ultimate settlement of the largest volume of travellers' accounts, therefore, falls upon the American and finally upon the New York banks. Within Europe this influence is very strongly felt in Switzerland, the Swiss rates of exchange upon London and Paris, during the summer months in particular, being largely determined by the enormous mass of travellers' checks cashed by the banks in the principal tourist centres.

4. Extraordinary influences affecting the foreign exchanges.—Under this head we shall consider the effect upon the foreign exchanges of currency changes, the production of the precious metals, commercial crises, and unusual commercial transactions.

A. *Currency changes.*—The effect of these is most apparent in a country whose government has suspended specie payments and made its own notes legal-tender. Under such circumstances the rates of foreign exchange rise to unusual and sometimes to extraordinary heights and are unstable and irregular in their fluctuations. The former effect is due to the depreciation of the notes, and the latter to the unsteadiness of their value. As explained in a previous chapter, gold is always at a premium in a country with an inconvertible currency, and since international values are usually reckoned on a gold basis, bills of exchange are necessarily also at a

premium. For example, the par of exchange between Italy and England is 25.225 lire per pound sterling, but when Italian notes are at a discount of ten per cent and bills on London at par it is necessary to pay twenty-seven lire of these notes in order to purchase a sovereign in London. Since inconvertible government notes are subject to violent and irregular fluctuations in value, the rates of foreign exchange must necessarily oscillate in response to these as well as to the influences ordinarily operative. In addition to these effects, inconvertible notes render all values more or less unstable and calculations regarding the future uncertain. Speculation thus becomes an element of unusual importance in mercantile affairs, and affects the value of foreign bills as well as of other classes of securities. When exporters are obliged to exchange their bills for a currency of uncertain and fluctuating value, they are certain, so far as possible, to protect themselves against the risk assumed by charging higher rates. Bankers and other dealers in bills are also willing to pay higher prices in such currency, because they are buying the right to receive a definite amount of gold, the value of which is certain.

Foreign rates of exchange are also influenced by changes in the standard of value. The readjustments of values which accompany changes of this character interrupt the ordinary course of commercial affairs, and thus indirectly affect the market for bills, but direct effects may also follow. It very rarely happens that the new standard is the exact equivalent of the old in value, and, hence, a readjustment of prices becomes necessary, which affects the value of bills as well as of everything else. The exchange of the old currency for the new sometimes involves international movements of the precious metals which always affect the rates of exchange.

When Germany substituted the gold for the silver standard in the early seventies, large quantities of gold were drawn from England and the surrounding continental countries, and the silver market was considerably depressed by sales of bullion, most of which went out of the country. These movements, like the importation and exportation of ordinary commodities, were accomplished by the negotiation of foreign bills, with the usual effect upon the rates.

The permanent effect of changes of this character depends upon the relation of the new standard to those of other commercial nations. If it brings the country into harmony with its neighbours by giving it the same standard that they possess, in the long run the rates of exchange will be more stable and more responsive to purely commercial influences; but if the new standard is different from that of neighbouring countries, the exchanges will be subject to extra-commercial influences of a disturbing character. The reason for this was explained in the section on the par of exchange. It was there shown that between countries possessing different standards no par exists, and that in the calculation of the rates the value of silver in terms of gold or of gold in terms of silver must be reckoned with as well as the quantities of metal in the standard coins and the demand and supply of bills. Thus if the nations with which a country transacts most of its business have the gold standard, and it adopts silver, it thereby introduces into its foreign exchanges a new and disturbing element, namely, the fluctuations in the value of silver. A merchant or investor who pays silver for a gold bill or gold for a silver bill is liable to gain or lose on account of fluctuations in the value of these metals, to say nothing of the ordinary circumstances affecting the value of bills. From the standpoint of the foreign ex-

changes, therefore, it is a great advantage to have a common standard throughout the commercial world.

Other currency changes of a less radical character than those already mentioned also affect the market for bills. A good illustration is furnished by our experience in 1894 with the greenbacks and Sherman notes. As we have already explained, the obligation of the government to redeem these in gold on demand, combined with other circumstances which raised the foreign rates to the gold-exporting point, forced the sale of government bonds to maintain the gold reserve and finally a contract with a syndicate of foreign bankers to prevent the operation of the "endless chain." Some of the bonds went into foreign hands, thus increasing the supply of bills and tending to depress the rates, and the bankers with whom this contract was made used the influence which their relations with foreign firms put into their hands to manipulate the bill market in such a way as to depress the rate below the gold-exporting point. On many other occasions in our history actual or prospective currency changes have produced marked effects upon the foreign exchanges. This was notably the case in 1875, when the Resumption Act was passed; in 1878, on the occasion of the passage of the Bland Act; and in 1893, when the "silver purchase" clause of the Sherman Act was repealed. The explanation of these effects is, however, too obvious to require further illustration. When we remember that currency changes affect the basis of all values, that the markets for international securities are as sensitive to such changes as a barometer to the pressure of the atmosphere, and that the rates of foreign exchange are as responsive to dealings in stocks and bonds as to exports and imports, the necessary con-

nection between currency changes and the bill market becomes clear.

B. *Production of the precious metals.*—Inasmuch as gold and silver serve in the double capacity of commodities of ordinary consumption and of money metals, their production affects the foreign exchanges in a twofold manner. In the first place, when they are shipped from country to country like ordinary commodities, they affect the bill market like other exports or imports, but they produce another indirect effect by raising prices and thus interfering with the ordinary course of international commerce. Wherever gold is the standard of value an increased output from gold-mines tends to raise all prices by lowering the value of the standard. This effect is first felt in the country in which the mines are situated, since the new metal finds its way first to the local markets. The rise of prices checks exports and stimulates imports by making the home markets relatively better than the foreign, and this speedily raises the rate of foreign exchange. If it chances to go beyond the exporting point, as is quite probable, gold will leave the country, its price on the local bullion markets will correspondingly rise, and the disturbed equilibrium of prices be thus restored.

Between countries with the gold standard the production of silver operates like that of any other commodity, but between gold-standard and silver-standard countries it also produces the twofold effect just described. The exchanges between England and India are a case in point.* When the value of silver falls in India, prices rise, and the shipment of goods between that country and England is immediately influenced, exports to England being

*The recent establishment of the gold standard in India has essentially modified the situation as here described.

checked and imports from there encouraged, until the gold price of silver in both countries has been adjusted to the same level and the prices of goods modified accordingly. During this process of readjustment the rates of foreign exchange will be effected. Indeed, it is through manipulation upon the markets for bills that the necessary readjustments will be brought about.

The foreign rates of exchange in the important centres of gold and silver production are constantly subject to influences of this character, and inasmuch as the precious metals must ultimately be distributed throughout the world in response to commercial needs, no markets are exempt from them.

C. *Commercial crises.*—The effects of commercial crises upon the rates of foreign exchange are so obvious that it will be unnecessary to dwell long upon them here. Inasmuch as the whole machinery of commerce is affected by them, they operate through nearly all the agencies which have been described. Occasions of this sort are characterized by the closing of factories and mines and by a general paralysis of the customary industrial agencies, and consequently both imports and exports generally decrease. The chief causes for the disturbance of the foreign exchanges, however, come from the stock markets and the banks. A general liquidation of accounts is the usual result of a crisis, and this frequently involves the transfer of large quantities of securities between international dealers with the necessary accompaniment of fluctuations in foreign rates. Bank failures often follow which involve readjustments of international accounts, and this, as we have already shown, is always accomplished through the medium of foreign bills. Not infrequently the rates advance beyond the gold-exporting point, and a considerable drain of specie results.

D. *Unusual financial transactions.*—Any unusual financial transaction of an international character is certain to interfere with the ordinary course of the exchanges, though by counter-manipulations it is sometimes possible to reduce such interference to a minimum. The most striking event of this character in recent times was the payment of the huge war indemnity of five milliards of francs by France to Germany in 1871–1873. The treaty of 1871 stipulated that the sum should be paid in gold or silver, in notes of the Banks of England, Prussia, the Netherlands, or Belgium, or in bills of exchange upon these places, and it was necessary for the French government to procure these forms of currency by operations upon the exchange market. Accordingly between June, 1871, and September, 1873, she purchased bills of exchange in favour of Germany to the amount of 4,248,326,374 francs. Inasmuch as the greater part of this vast sum was procured by means of loans from the French people, which involved international exchanges of securities, the aggregate of the dealings in foreign exchange occasioned by this indemnity greatly exceeded the above figure.

Transactions of such magnitude, added to those occasioned by the ordinary processes of commerce, would naturally be expected to produce great fluctuations in the rates, but on this occasion such a result was avoided, partly on account of the length of time over which the operations were spread, and partly because a syndicate involving the leading bankers in Europe cooperated with the government in reducing the disturbances to a minimum. The average rate of exchange on England during the period did not exceed 25.60, and the average premium on gold at the Paris Bourse averaged twelve francs per thousand. These figures, however, indicate

that the market was influenced by events of an extraordinary character, and, had not the Bank of France managed with great skill, industry might have been seriously interrupted and much harm done.

Events of a similar character but of less magnitude were the payment of a war indemnity by China to Japan in 1895, and the payment of $20,000,000 by the United States to Spain in 1900 in consideration of the relinquishment of Spanish sovereignty over the Philippine Islands.

5. The reaction of rates of foreign exchange upon international commerce.—Although the rates of foreign exchange are usually effects of which commercial events are the causes, the reversal of this relation is not uncommon. Inasmuch as these rates enter into the determination of the profits of every international enterprise, it is evident that imports and exports may be affected by them. Indeed, a very high rate always tends to check the former and to encourage the latter. An exporter of wheat who is able to net two cents per bushel upon his Liverpool sales, when English exchange is at par, enjoys a handsome increase in his profits when the rates rise to the gold-exporting point, but when they fall to the gold-importing point he must deduct from them the expenses involved in the shipment of the coin in which he will be paid. To be sure, he may be able to recoup himself by raising prices, but this procedure is apt to check his sales and may stop them altogether. Importers, on the other hand, whenever possible, take advantage of low rates by increasing their foreign purchases, and buy as little as possible when the rates are high. If the foreign exchanges were responsive to trade influences only, these counter movements would offset each other, and would not be particularly significant, but in the light of the influences exercised by the stock exchanges, the banks,

and the events described in the last section, they become most important.

By way of illustration, let us note the possible effects of speculation in securities and currency changes. The sale of a large quantity of American railroad stocks or bonds for European account would increase the supply of bills on the New York market and depress the exchanges. Exporters would then realize less from the sale of their bills, and might find it unprofitable to ship new cargoes. In that case the demand for the various classes of goods which constitute our chief exports would diminish, prices would fall, and the effects would thus spread to the grain- and cattle-producers of the West and to hundreds of mines and factories throughout the country. In all probability the needs of Europeans for food, clothes, and other necessaries would soon restore commerce to its usual channels, but it is easy to imagine instances in which these needs would be supplied from other sources, in which case home producers would suffer a permanent loss.

The effect of currency changes upon international commerce has been frequently noticed of late years by the combatants in the so-called battle of the standards which has been waged in the United States. Without anticipating the discussions of subsequent chapters, it may easily be shown that the introduction of the silver standard into the United States would seriously affect our foreign commerce. At the present time we deal chiefly with gold-standard countries, and must continue so to do for a long time to come. The adoption of the silver standard, therefore, would introduce into most of our international transactions the disturbing influence of the fluctuating value of silver. Our merchants would be obliged to make their contracts with Englishmen,

Frenchmen, Germans, and others in terms of gold, and pay and be paid in silver. Fluctuations in the price of this metal between the date on which the contracts were made and that of their satisfaction might increase their profits, annihilate them, or turn them into losses; in any case, and under the best of circumstances, the possibility of such fluctuations would render the outcome of all foreign transactions uncertain and tend to discourage them. As explained in the preceding section, the fluctuations in the value of silver and the uncertainty which would accompany them would first affect the foreign rates of exchange and through them commerce.

On account of the reactionary power of the foreign exchanges upon commerce, it is best, so far as possible, to eliminate from them all influences except those of a purely commercial character. Speculation in international securities should, therefore, be discouraged in every possible manner and currency changes introduced only when the need for them is very pressing. Unusual financial transactions cannot always be avoided, but they are rarely, if ever, favourable to the interests of producers and to men engaged in the ordinary processes of commerce.

6. Characteristics of the chief markets for foreign bills.—In each country there is some one city which serves as the chief agent in the conduct of foreign exchanges. In England it is London; in the United States, New York; in France, Paris; in Germany, Berlin; and in Austria-Hungary, Vienna. Each of these centres has its own peculiarities, some of which are worth noting on account of the light they shed on modern commercial processes and methods.

A. *London.*—This city enjoys the distinction of being the chief centre of the world's exchanges. It not only

is to the British Isles what New York is to the United States, Paris to France, Berlin to Germany, and Vienna to Austria-Hungary, but these other centres are grouped about London in such a way as to render her the head and centre of the entire system. The foreign banks in each of these cities have London correspondents through whom they transact most of their foreign business.

The explanation of this interesting situation must be sought in the commercial history of the last two centuries. During all of that period English merchants have been the leaders in foreign trade, and English ships have dominated the seas. Many agencies cooperated with their own genius for commerce in giving them this position. Among these the colonial system, the policy of free trade, the early establishment of and persistent adherence to the gold standard, and great wealth are most important. By spreading English political influence all over the world, the colonial system has removed many obstacles to commerce in the form of unfavourable tariffs, hostile treaties and bad laws, and has given English merchants many advantages over their competitors. By the free-trade policy English markets have been opened to all the world, and by inviting importation has extended exportation and made it more profitable. The establishment of the gold standard in 1816, and its steady and unswerving maintenance for a century, gave England a stable currency, while many of her rivals were wallowing in the slough of inconvertible government notes or fighting the bogy of bimetallism. During all this period bills payable in England have been absolutely certain in value, and there have been times when they were the only ones of which this could be said. Her great wealth has made her people the world's creditors, and as stockholders and bondholders

has given them an interest in the industries of every nation.

The combined result of these various influences has been the establishment of trade relations with every part of the world, including connections between English banks and those of every other country. Wherever banks have not existed with which connections could be formed, Englishmen have established them, either in the form of independent institutions or branches of those at home. Thus it happens that in no city in the world can drafts upon so many foreign places be purchased as in London, and through no other centre can foreign exchanges with every part of the world be so easily and economically conducted. The use of London by other cities as an intermediary in many of their foreign transactions is thus in some cases a matter of necessity and in others a matter of economy.

One of the peculiarities of the London market is the fact that many bills are paid there, but few drawn. English exporters generally receive their pay in the form of London exchange and rarely draw on their creditors in foreign cities, and English importers usually permit their foreign creditors to draw on them instead of sending New York or Paris or Berlin exchange, as might be done in many cases. Custom is partly responsible for this, but in the main it is due to the fact that London exchange is easily and usually advantageously negotiated in every part of the world, and English merchants prefer to deal in this way because it makes them independent of fluctuations in the rates. Under this system their contracts are drawn in pounds sterling and are payable in London, and they need not trouble themselves about the exchanges. They are, of course, obliged to pay for this privilege in the form of higher purchase and lower selling

prices, but they are thereby relieved of much anxiety and the English markets of one element of uncertainty which often disturbs those of other countries. One of the results of this practice is that London settles the accounts of Englishmen with all the world, and is thus almost constantly in a position to demand cash from many quarters of the globe as well as subject to drafts from many places.

This latter fact combined with the peculiarities of the English banking system gives to the Bank of England its dominant position in the field of international finance and to the English bank rate a world-wide significance. Holding as it does the reserves of the other banks and being the centre of the London clearing system, it is able to exert an influence upon the international flow of the precious metals which no other institution possesses. The work of settling the balances which result from the exchanges of England with every part of the world falls to this bank, and it is thus usually able to start the flow of a stream of gold towards England, when desirable, or to facilitate exportation. In the former case the bank raises its rate of discount and thus discourages the accumulation of credit balances, and in the latter case it encourages that practice by lowering the rate of discount. When the foreign bankers of London find it unprofitable to extend their credit with the Bank of England, they are obliged to curtail the credit balances of their foreign debtors, and this usually means the liquidation of a portion of them by means of shipments of gold. Under the opposite circumstances they grant credit freely, even to the extent at times of buying accommodation bills with gold.

In quoting the rates of foreign exchange London has the peculiar habit of sometimes stating the price of a unit of the foreign currency in terms of English money, and

sometimes of giving the equivalence of a pound sterling in foreign currency. As an illustration of her methods may be taken the following course of exchange for December 8, 1891:—

COURSE OF EXCHANGE.
London, December 8, 1891.

	Time.	Prices Negotiated.		Meaning of Price.
		From	To	
Amsterdam	Short	12 1 5/8	12 2 3/8	Gilders and stivers for £1.
"	3 months	12 3 5/8	12 4 1/8	
Rotterdam	"	12 3 5/8	12 4 1/8	
Antwerp and Brussels	"	25 45	25 50	Francs and centimes for £1.
Paris	Short	25 22½	25 27½	
"	3 months	25 37½	25 45	
Marseilles	"	25 38¾	25 45	
Hamburg	"	20 51	20 55	Reichsmarks and pfennige for £1.
Berlin	"	20 51	20 55	
Leipsic	"	20 51	20 55	
Frankfort on the Main	"	20 51	20 55	
Petersburg	"	22 11/16	22 13/16	Pence for 1 rouble.
Copenhagen	"	18 40	18 44	Kroners and öre for £1.
Stockholm	"	18 42	18 46	
Christiania	"	18 42	18 46	
Vienna	"	11 92½	11 97½	Florins and kreutzers for £1.
Trieste	"	11 92½	11 97½	
Zurich and Basle	"	25 52½	25 57½	Francs and centimes for £1.
Madrid	"	41 5/8	41 7/8	Pence for 1 peso.
Cadiz	"	41 5/8	41 7/8	
Seville	"	41 5/8	41 7/8	
Barcelona	"	41 5/8	41 7/8	
Malaga	"	41 5/8	41 7/8	
Granada	"	41 5/8	41 7/8	
Santander	"	41 5/8	41 7/8	
Bilboa	"	41 5/8	41 7/8	
Zaragoza	"	41 5/8	41 7/8	
Genoa, Milan, Leghorn	"	26 12½	26 17½	Lire and centesimi for £1.
Venice	"	26 12½	26 17½	
Naples	"	26 12½	26 17½	
Palermo and Messina	"	26 12½	26 17½	
Lisbon	90 d. date	payable in legal currency.		Pence for 1 milreis.
Oporto	90 d. date	40¾	41	
		41	41¼	
Calcutta	demand	14 9/16	14 11/16	Pence for 1 rupee.
Calcutta and Bombay	30 d. sight			
	docm't pap.		14½	
New York	demand	49 3/8	49 5/8	Pence for 1 dollar.

(Clare, "The A B C of Foreign Exchanges," p. 40.)

It will be observed that exchange on New York, Petersburg, and Spanish, Portuguese, and Indian cities is expressed in pence per unit of these currencies, while all other quotations give the equivalence of a pound sterling in the money of the country quoted. For example, the New York rate on the date above mentioned was from 49⅜ to 49⅝ pence per dollar, while that of Paris was from 25.22½ to 25.27½ francs per pound sterling. As a result of this lack of uniformity discussions of the English exchanges are sometimes confusing, since a rise of the rate on one market will be expressed by lower figures and on another by higher. Thus, when discussing the New York exchanges 49⅝ indicates a higher rate than 49⅜, but in the case of Paris 25.27½ is a lower rate than 25.22½, since the higher figure in the former quotation indicates that it costs more pence to buy an American dollar, while the higher figure in the latter quotation means that a pound sterling will buy more French money.

This strange practice is the result of long established habit, and is an example of the tendency of the English people to cling to old customs even at the expense of convenience and simplicity.

B. *The New York Exchanges.*—Most of the transactions in international exchange occasioned by the foreign commerce of the entire United States and its commercial dependencies are made in New York City. As previously explained, this is due to the fact that it has commercial relations with every other part of the United States and is the centre of the banking system of the country.

Like most other exchange centres, New York draws more bills upon London than upon any other city. Not only is the commerce with the British Isles settled through such bills, but transactions between the United States

and many other countries are settled by the same means. For example, if a New York merchant imports a cargo of currants from the Ionian Islands, his creditor will not draw directly upon him, but upon his London correspondent. Likewise, if a shipment of goods is made to a South American port by a New York merchant, he will probably receive his pay in the form of a London remittance. This condition of things is explained by the facts described in the preceding section.

One of the peculiarities of the New York exchanges is the regularity of certain seasonal fluctuations. On account of the fact that the exports of this country consist chiefly of agricultural products, bills of exchange on foreign markets, especially on London, are plentiful during the season when these crops are being exported. Consequently, from early autumn until about the first of January, the London rate of exchange is apt to be very low in New York, sometimes falling below the gold-importing point. During the remainder of the year the rates are generally higher, and during the spring months they not infrequently rise to the gold-exporting point. The regularity of these movements is often interfered with by the various influences which have been described in the preceding sections of this chapter, but, as a rule, they are observable, and, when not, the counteracting agencies can usually be discovered.

A second peculiarity of the New York exchanges is due to the treasury reserve, which may be drawn upon when gold is needed for exportation. In England and Germany every adverse movement of the precious metals directly affects the bank reserves and through them the foreign exchanges, since in those countries the presentation of bank-notes for redemption is the regular method of procedure when gold is needed, but in the United States

the situation is different. The banks are allowed to keep any form of legal-tender money in their reserves, and hence may throw the burden of a demand for gold for foreign shipment entirely upon the treasury by holding on to their own supply, if they have any, and presenting greenbacks or Sherman notes for redemption. The result is that a demand for gold does not so directly affect the foreign rates in New York as in London or Berlin, since it does not necessarily diminish the aggregate reserves of the banks and through them the rates of discount. The situation in this particular has been somewhat changed since the passage of the act of 1900, which prevents the reissue of once redeemed notes except in exchange for gold. The effect of this is to actually diminish the bank reserves to the extent that notes are presented for redemption, since they do not find their way into circulation again and thus into the banks until an equivalent amount of gold has been withdrawn.

This peculiarity is not so important as it might seem at first sight, since ordinarily the banks respect the treasury reserve, and probably do not draw upon it with the same freedom as do the joint-stock and private banks of England upon the reserve of the Bank of England, but in times of pressure it offers to the banks a way of escape, and, as we have seen, involves the treasury in corresponding difficulties.

The method of quoting the New York exchanges is quite as peculiar and indefensible as that of the English. The London rate is expressed by indicating the number of dollars and cents required to purchase a pound sterling, the Paris rate by the equivalence of a dollar in francs, the Berlin rate by the number of dollars required to purchase four marks, and the Amsterdam rate by the price of a gulden or guilder in United States currency. The

following table, copied from the *Wall Street Journal* for June 21, 1901, may serve as an illustration:—

FOREIGN EXCHANGE. ACTUAL RATES.

(Compiled by Schumacher & Co.)

	Cables.	Demand.	60 Days.
Sterling, open . . .	488¾–488⅞	488 –488⅛	485¾
" closing . .	488⅝–488¾	487⅞–488	485⅝–485¾
Francs, open	515 less 1/16	515⅝ less 1/16–1/16¼	517½ less 1/16–1/18⅛
" closing . . .	515 less 1/16	515⅝ less 1/16	517½ less 1/16
Marks, open	95⅞–1⅛	95⅝–11/16	95⅛–95⅜
" closing	95¾	95⅝	95⅛
Guilders, open . . .		40½	40½
" closing . .		40½	40½

Market opened steady.
Market weak and fully 1/32% lower.
Paris exchange on London 25 fr. 21 c.; adv. 1 c.
Berlin exchange on London 20 m. 38 pf.; unchanged.

It should be observed that the quotation of sixty-day as compared with demand bills in *francs* is expressed by higher figures, but in *sterling* and *marks* by lower. This does not mean that sixty-day bills on Paris are worth more than demand bills on the same market, while in all the other cases they are worth less, but simply that the figures opposite the word "francs" mean francs per dollar, while all the others mean dollars or cents per pound sterling, per four marks, or per guilder. The simplification of the quotations by always stating the price of a unit of the foreign currency in American money would render them intelligible to the general public and more convenient for all.

C. *The Paris and Berlin exchanges.*—The only peculiarity of the Paris exchange worth mentioning in this connection is due to the nominal existence of the bimetallic system in France. According to French law the Bank of France has a right to meet its obligations either in gold

coins or in silver five-franc pieces, the ratio between the two being 1 to 15½. Therefore, when gold is needed for exportation, and notes are presented to the bank for redemption in that metal, it has the legal right to refuse the gold and to pay in silver, thus forcing the exporter to obtain his gold in some other way. On this account it is possible for the rate of exchange in Paris to attain a higher figure than the ordinary expenses of gold shipments would warrant. For example, the gold-exporting point to London is 25.32 francs, but the price of bills has risen as high as 25.45 francs. The explanation is that exporters, unable to get gold at the bank by presenting notes for redemption, are obliged to collect gold coin or purchase it from money-changers or pay the bank a premium for bullion or foreign coin. In either case the expense involved and the light weight of the coins obtained constitute an additional charge on gold shipments which makes it profitable to pay higher prices for London bills.

In Berlin ordinary influences are less obstructed in their action than in Paris, though gold flows to that centre more readily than away from it. While the Imperial Bank pays out gold freely upon the presentation of notes for redemption, it frequently exerts influence in various ways to prevent exportation, or at least to check a tendency to ship large quantities out of the country. It sometimes also facilitates importations of gold by paying higher prices than the other state banks.

7. The interpretation of the rates of exchange.—The numerous and varied influences which enter into the determination of the rates of foreign exchange often render their interpretation in a given case very difficult. It is much easier to catalogue the various forces which operate from time to time than to identify and measure them in a particular instance. The only rule which can be

safely followed as a guide in an attempt to explain a rate is to disregard theories and suppositions and to rivet the attention upon the trade, stock-exchange, and banking movements of the time. A careful analysis of these will always throw light upon the problem and usually solve it. Currency influences are more difficult to detect, because they are more indirect and subjective in their operation. It is always dangerous to draw conclusions before all the essential facts in the situation have been revealed and explained.

As international relations become more and more complex the interpretation of the exchanges becomes more difficult. It is quite unsafe to conclude that the balance of trade is against us whenever the rates of foreign exchange go above par. That was never a safe conclusion, but it was more apt to be correct a century ago than at the present day. Many people still cling to the old theory of the mercantilists that, whenever imports exceed exports, a country is in danger of losing all its treasure and with it the basis of its prosperity, and these people usually attach great importance to high exchange rates because they consider them as indicative of these undesirable conditions. A study of the facts, however, will show that in numberless cases the rates are high when the balance of trade is favourable, because international securities have changed hands or banks have manipulated the exchanges, or the bullion market has been disturbed, or some of the other influences described in the preceding sections have been operative. No careful student of facts, moreover, can be longer misled by the old fallacy that an unfavourable balance of trade is a bad sign.

REFERENCES.

Most of the topics treated in this chapter are discussed in Clare's *The A B C of the Foreign Exchanges* and *A Money Market Primer and Key to the Foreign Exchanges;* Goschen's *The Theory of the Foreign Exchanges;* Macleod's *The Elements of Money and Banking*, ch. vii, and *The Theory and Practice of Banking*, ch. vi; Loyd's *Four Lectures on Bills of Exchange*, introductions to Lectures I and IV; Schraut's *Die Lehre von den auswärtigen Wechselkursen unter besonderer Berücksichtigung der deutschen Verhältnisse;* and Lejeune's *Monnaies, Poids et Mesures des principaux Pays du Monde*. On the characteristics of the London, New York, and Paris money markets see especially Clare's *Money Market Primer*. Schaps' *Zur Geschichte des Wechselindossaments* treats of the development and history of the right to transfer bills by endorsement, and Hertzka's *Wechselcurs und Agio* treats of the relations between the rate of exchange, the value and movements of gold, the balance of trade, and prices. On the mathematics of the exchanges, and the methods and customs of the various centres, see Tate's *Modern Cambist*, Norman's numerous books, especially *Universal Cambist and Complete Guide to the World's Twenty-nine Metallic Monetary Systems*, and Haupt's *Arbitrages et Parités*. On the extraordinary financial transactions described in section 4 see Say's *Dictionnaire des Finances*, art. Indemnités de Guerre; and Léon Say's *Rapport sur le Payement de l'Indemnité de Guerre.*

CHAPTER XIII.

THE BANK RATES.

THE charges made by banks upon their loans and the interest they pay on deposits are vitally connected with the topics which have been discussed in the preceding chapters, and must be considered before our account of the mechanism and principles of exchange is closed. Of the former, three may be distinguished: the charge on bills discounted, known as the rate of discount; that on promissory notes; and that on loans payable on demand, usually called the rate on "call loans." These three rates have much in common and are also related to the interest paid on deposits, but they may be profitably treated separately.

1. **The rate of discount.**—The most striking fact connected with this rate is its variation from the ordinary rate of interest and its tendency to fluctuate. Reasoning from the principle of political economy that the income from capital invested in all forms tends to conform to the same rate, due allowance being made for differences of risk, length of the period of investment, etc., we should expect that the rate of discount would approximate very closely the general rate of interest. As a matter of fact, however, the two rates fluctuate quite independently of each other.

Between 1848 and 1878 the rate of discount of the Bank of England ranged from two to two and one-half per cent about one-quarter of the time, was three per cent

or below about one-half of the time, and four and one-half per cent or above about one-third of the time. During this period it is believed that the general rate of interest steadily declined and was probably between two and three per cent, as indicated by the income derived from English consols. The rate of discount of the Bank of France during the same period was four per cent most frequently, but fluctuated from two per cent to nine per cent, while the general rate of interest was probably slightly above that of England, and, like it, tended constantly to decline. The rate of the Bank of Prussia and of its successor, the Imperial Bank of Germany, ranged between three and nine per cent during the period, and, like that of the French bank, stood at four per cent more frequently than at any other rate. In these cases, as well as in those of the other great banks of which we have statistical records, the greatest fluctuations in the rate of discount have occurred in recent times, and, while the average rate is a little lower than formerly, it does not exhibit that marked tendency to fall that is observed in the general rate of interest.

There can be no doubt that the income derived from one kind of investment exerts an influence upon every other, and that the economic law above mentioned is valid, but the rate of discount is subject to special and peculiar influences which make it necessary to put it in a class by itself and to distinguish it from all others. In the long run it is regulated by the supply of bills of exchange and the funds available in the hands of bankers and bill-brokers for investment in this form. When the number of bills is so great that it becomes difficult to sell them, the rate rises, and when the bankers find it difficult to invest their funds it falls. Whether or not an exact equilibrium of demand and supply brings this rate into

harmony with the general rate of interest it is impossible to determine with certainty, but there seems to be some reason why this need not necessarily be the case. This will appear from a comparison of the influences affecting the demand and supply of bills and those which determine the general rate of interest.

The supply of bills depends upon the extent of trade and the degree of development of the credit system. If all exchanges were accomplished by means of coin, bank-notes, and checks, there would be no bills. It is only when credit is granted that this particular form of document makes its appearance. The habit of granting credit regularly on certain classes of transactions being established, the number of bills will, of course, depend upon the magnitude of these transactions. If it be true, as is claimed by some, that a relatively increasing proportion of exchanges is being each year settled by cash in some form, the supply of bills must be relatively decreasing, although it may be and probably is increasing absolutely. The funds available for investment in this form come, as we have previously shown, from three main sources, namely, from the cash deposits of business men, a portion of which can be lent, from capital temporarily lodged with the bank because its owners have no immediate use for it or prefer the small rate of interest paid by the banks on deposits to any other use at the time open to them, and from the bank's own credit. The general rate of interest depends upon the total supply of capital within a country or a market and the demand for it for all sorts of purposes for which it can be employed. The question before us concerns the exact relation between the total demand and supply of capital within a country on the one hand, and the loan fund of banks and the supply of bills on the other. Undoubtedly the general de-

mand for capital throughout a country is greater when trade is active and bills accordingly abundant than when trade is sluggish and bills scarce, and it is also probably true that when capital is abundant the amounts entrusted to banks for temporary keeping and the current accounts of business men are apt to be relatively large, and under the opposite circumstances relatively small. It is doubtful, however, if this general relation between the market for capital and that for bills is so intimate and close that an equilibrium between the demand and the supply of bills would always bring the rate of discount into harmony with the general rate of interest. There is no fixed proportion between the total amount of capital in a country and bank deposits on the one hand, and between the magnitude of commerce and that of industry in general on the other. These proportions are probably changing all the time, certainly they change frequently, and it is, therefore, quite possible that the equilibrium rate in the case of bills at a given time may be quite different from that of the total fund of capital of the country.

A very close connection exists between the rate of discount and the cash reserves, the former being generally high when the reserve is low and low when it is high. The explanation for this is to be found in the fact that bank credit is an element of the fund available for investment in bills. When the reserve runs low it is necessary to contract this element, and when it is high the bank is anxious to expand it. The ratio between the demand and the supply of bills is thus changed, and with it the rate of discount. In other words, when a bank finds that its cash is running low it either stops discounting or diminishes the amount of its discounts by refusing everything except paper of the highest class. In either case

the rate will probably rise. On the other hand, when it has more money than is required to meet the daily needs of its customers and to provide for unexpected demands, it seeks investment for the surplus by lowering its rate and by showing its willingness to accept all the well-secured bills that are presented. By way of illustration the table on p. 278, showing the relation between the rate of discount and the reserve of the Bank of England for a series of years, may be studied with profit.

From this table it is evident that many of the influences affecting the rate of discount operate through the bank reserves and are identical with those which cause these reserves to fluctuate. On account of differences in the nature of the business transacted in different communities and the changes which are constantly taking place these influences vary considerably among different banks and with the same bank at different times. We shall, therefore, discuss only those which are most frequent and most nearly universal in their operation.

International movements of the precious metals affect the reserves of banks engaged in international commerce, and through their connections those of other banks as well. This is especially true of England and Germany, and in a less degree of the United States and France. For example, it is impossible that any large amount of gold should leave the British Isles without diminishing the reserve of the Bank of England. The demand might fall in the first instance upon the foreign bankers of London, but it would be speedily shifted to the institution in which all the surplus reserves are kept. As we have previously shown, the usual effect of this is a rise of the bank rate above those ruling in the neighbouring countries, for the purpose of checking discounts on the one hand and of attracting foreign capital on the other. A movement of

BANK OF ENGLAND.

Date.	Annual Average Reserve.	Annual Average of Minimum Rate of Discount.		
		£	s.	d.
1844	£8,500,000	2	10	0
1845	8,516,000	2	13	8
1846	8,539,000	3	6	6
1847	5,291,000	5	3	6
1848	9,784,000	3	14	5
1849	10,694,000	2	18	7
1850	11,219,000	2	10	1
1851	9,103,000	3	0	0
1852	12,764,000	2	3	0
1853	8,907,000	3	13	10
1854	7,290,000	5	2	3
1855	8,366,000	4	17	10
1856	5,772,000	6	1	2
1857	5,347,000	6	13	3
1858	12,037,000	3	4	7
1859	11,076,000	2	14	7
1860	8,451,000	4	3	7
1861	7,611,000	5	5	4
1862	10,194,000	2	10	7
1863	8,536,000	4	8	2
1864	7,478,000	7	8	0
1865	8,089,000	4	15	4
1866	6,745,000	6	19	0
1867	12,906,000	2	10	9
1868	11,903,000	2	1	11
1869	10,320,000	3	4	2
1870	12,435,000	3	2	0
1871	14,162,000	2	17	8
1872	12,122,000	4	2	0
1873	12,051,000	4	15	10
1874	11,035,000	3	13	10
1875	11,597,000	3	4	8
1876	15,962,000	2	12	1
1877	12,478,000	2	18	0
1878	10,879,000	3	15	8

(Table I. Bank of England Annual Averages, pp. 8 and 11 of "Bank Rate in England, France, and Germany, 1844-1878," by R. H. Inglis Palgrave. London, 1880. Effingham Wilson.)

gold from Germany would in like manner diminish the reserve of the Imperial Bank, since that is the source from which the precious metals needed for foreign shipments are regularly drawn, and would be similarly checked by a

rise in the rate of discount. In the United States the connection between the bank reserves and the exports of gold is not quite so direct and immediate on account of the gold reserve of the treasury upon which the banks can draw in time of need. The Bank of France has also special means of protecting its reserve in the option which it enjoys of paying in depreciated silver five-franc pieces, thus compelling the withdrawal of gold from the general circulation. In all probability, however, it has ultimately to bear the drain due to large shipments abroad, because in one way or another it will be compelled to supply the country with the currency needed.

A more nearly universal cause of changes in the rates of discount is the seasonal fluctuation in the demand for currency. Everywhere in Europe the rates are higher in the winter than in the summer months. The table on p. 280 prepared by Mr. Inglis Palgrave shows this very clearly.

The reason for this is the fact that the autumn and early winter are the seasons of the greatest business activity. Agricultural products are then coming to market and most of the supplies from abroad arrive during these seasons. It is then, too, that farmers and other people, who make little use of banks, make most of their purchases. The demand for cash is thus greatly increased at this time, and the reserves of banks correspondingly diminished. In England these influences are intensified in the fall by large shipments of grain from the United States, by the English habit of taking holidays at this season of the year, and by the fact that in Scotland payments of rent, interest on mortgages, servants' wages, and many salaries, as well as the settlement of important transactions on heritable property, are usually made in November and May. The special Scotch demand for currency at that time, and

ANNUAL AVERAGE VARIATIONS IN RATES OF DISCOUNT FOR THE BANKS OF ENGLAND, FRANCE, AND GERMANY FOR THE YEARS 1885 TO 1891.

Bank of England.				Bank of France.				Bank of Germany.			
Date.	Actual Rate. £ s. d.			Rate on Scale of 100. Av. Rate for 7 yrs. £3 8s. 4d. = 100.	Date.	Actual Rate. £ s. d.		Rate on Scale of 100. Av. Rate for 7 yrs. £3 0s. 6d. = 100.	Date.	Actual Rate. £ s. d.		Rate on Scale of 100. Av. Rate for 7 yrs. £3 14s. 7d. = 100.
Jan.	4	9	2	130	Nov.	3	4	3	106	Dec.	4	6	10	117
Dec.	4	7	9	128	Oct.	3	3	10	106	Jan.	4	3	4	112
Nov.	4	6	9	127	Jan.	3	2	6	103	Nov.	4	2	10	111
Oct.	3	18	7	115	Sept.	3	0	2	99	Oct.	4	0	9	108
Feb.	3	11	10	105	Feb.	2	19	7	98	Sept.	3	13	1	98
Sept.	3	8	3	100	Mar.	2	18	7	97	Feb.	3	12	7	97
Mar.	3	2	2	91	Apr.	2	18	7	97	Mar.	3	10	9	95
Aug.	2	18	1	85	May	2	18	7	97	Apr.	3	10	1	94
Apr.	2	16	0	82	June	2	18	7	97	June	3	8	7	92
May	2	15	11	82	July	2	18	7	97	July	3	8	7	92
June	2	12	9	77	Aug.	2	18	7	97	Aug.	3	8	7	92
July	2	11	6	75	Dec.	2	4	10	74	May	3	8	1	91
Difference between Highest Month and Lowest Month £1 17s. 8d. Mean of the extreme variations during period 1885–91 27.5%.					Difference between Highest Month and Lowest Month 19s. 5d. Mean of the extreme variations during period 1885–91 16%.				Difference between Highest Month and Lowest Month 18s. 9d. Mean of the extreme variations during period 1885–91 13%.			

(Pp. 17, 18, 19 of Palgrave's pamphlet, "Bank Acts and Bank Rate," London, 1892.)

the increased activity in those lines of business which have been quiescent during the winter, account for the rise of the bank rate in England in the month of May which is so clearly indicated in the above table. In the United States the same phenomenon is observable, especially in the case of the reserve banks of the city of New York, which are obliged to meet large demands for currency from the West and the South during the fall and early winter when the farmers' crops are placed upon the markets.

In England a quarterly fluctuation in the bank rate is

observable, which is explained by the payment of dividends of large corporations and by other settlements placed by custom upon those particular dates.

Besides those influences which affect the rate of discount through the bank reserves there are others which operate more or less independently. This is evident from the fact that there is no fixed relation between the figure by which the rate is expressed and that which indicates the proportion of reserve to liabilities. For example, the records of the Bank of England show that when its reserve has stood at about thirty-six per cent of the liabilities the rate of discount has been sometimes six per cent, sometimes five and one-half per cent, and sometimes five per cent, and that when the rate has been five per cent the percentage of reserve to liabilities at different times has varied from twenty to fifty. These facts indicate that safety at some times demands much larger reserves than at others, and that the state of credit is a factor in the determination of discount rates. It is evident that when confidence between man and man is weak and business people are unwilling to grant to their customers the usual credit, bankers must keep larger reserves, and, in order to do so, must curtail discounts by raising rates. It is equally obvious that under the opposite circumstances they may safely expand their credit to much wider limits by continuing to discount at profitable rates until the proportion of reserves to liabilities has reached a much lower figure. Every commercial crisis has furnished numerous illustrations of the point here under consideration, but even in ordinary times the credit system is subject to change, and with it the ratio between the rate of discount and the bank reserves. It is possible that the future may witness a considerable change in the practice, so long prevalent, of making international payments in time bills

and sight drafts, cable transfers being substituted for them on a large scale. If so, discount rates will certainly be affected and the proportion between them and bank reserves changed. During the period of the development of our credit system many changes have taken place in the proportion between reserves and liabilities demanded by safety, and with them in the proportion between the demand and supply of bills.

There is hardly any limit to the extent to which one might go in particularizing the influences affecting the rate of discount. In order to make a complete list, it would be necessary to indicate all the circumstances which might affect deposits on the one hand and the supply of bills on the other, and this would require a minute analysis of the various industrial forces acting at a given time. For the purposes of this book, however, it is sufficient to have pointed out the nature of the charge and the most common causes of its fluctuation.

The effects of changes in the rate of discount need not long occupy us, since most of them are sufficiently obvious from what has already been said. That they may influence the international movement of the precious metals, and thus the foreign exchanges we have already shown. Their effect upon commerce was also suggested when it was shown that a rise in the rates might check discounts. Business men transform their bills into cash for the purpose of making immediate use of the proceeds in commercial transactions, and, if they are prevented from so doing by a high rate of discount, commerce must be proportionately checked. Some people trade almost exclusively with borrowed capital, and are, therefore, obliged to present their bills for discount, whatever the rate. To these a high rate means diminution and perhaps complete loss of profits, and a low rate greater gains. The value of

most interest-bearing securities is also affected by the rate of discount. The capital used upon the stock exchanges is largely borrowed from the banks, and, accordingly, when the rates are high there will be less inclination to borrow and the demand for securities will decline. On the other hand, when the rate is low stock-brokers will be inclined to borrow freely and to make large investments, with the effect of raising the price of the securities in which they deal. One needs simply to follow influences of this kind through their various ramifications to see that the effect of the rate of discount is far-reaching and by no means insignificant.

2. The rate on promissory notes.—The charge made by banks upon promissory notes as distinguished from bills of exchange usually follows the rate of discount very closely, but is not always identical with it. The Bank of England has often made a difference of two per cent between the two, and it is probable that most banks charge more on the former class of loans. The explanation of this practice is to be found in the purpose for which such loans are made and in their relation to the banking business. The money thus borrowed is used for an almost infinite variety of purposes, but very often for the expansion of business, the making of improvements, and the meeting of temporary deficits due to all sorts of causes. In such cases the funds for payment must come from profits which depend upon the outcome of the operations undertaken or from other sources which are frequently uncertain to some extent. Bankers are frequently asked to renew such loans upon the date of their expiration, a circumstance often due to the fact that the expectations of the borrowers have not been realized. From the banker's point of view, loans of this character are distinctly inferior as investments to bills of exchange. Unlike these,

they are not based upon transactions the completion of which creates the funds which may be used for their payment, and though they may mature in comparatively short periods of time, they are much less apt to be paid at maturity. On the score of security in the ordinary sense, promissory notes may be quite as good as bills, since the bank may require the deposit of securities, or goods of a value considerably in excess of the notes, or the endorsement of men of known financial ability, but in spite of this fact such notes lack the high degree of fluidity possessed by the best bills.

In some cases doubtless the higher rate on loans of this character may be explained by the law of demand and supply. Ordinarily we may suppose that a bank prefers first-class bills and will invest as large a portion of its funds as possible in this way. Only the surplus, therefore, which cannot be thus used, will be available for loans of the other class, and this as compared to the demand for such loans may be relatively so small as to raise the rate considerably above the discount level. Such a circumstance would undoubtedly tempt the bank to increase the investments of this class at the expense of the discount fund, but ordinary prudence might render this inadvisable. Safety demands that a sufficient portion of the funds should be automatically transmutable into cash to enable banks to keep their reserves at the proper level, and, whenever possible, they use bills for this purpose.

The proportion between bills and promissory notes in the portfolios of banks varies greatly according to their situation and the nature of the business conducted in the vicinity. In country towns and small cities bills are rare and most of the investments belong to the other class. In such places it is probable that no distinction is made between the two rates, but in the large centres it is other-

wise, and a consideration of the difference in the character of the two classes of securities is imperative. It must be remembered also that a promissory note may be used as a substitute for a bill. An exporter, for example, may demand cash for his goods, and the purchaser may obtain the necessary funds from his bank on the security of his note due on the same date as a bill of exchange that might otherwise have been drawn upon him. In this case the sale of the goods purchased enables him to pay the note, just as otherwise it would have enabled him to meet his bill at maturity. There is, of course, no substantial difference between notes of this character and bills, and banks would be quite as willing to take the one as the other. In those lines of business and in those places where cash transactions are the rule doubtless many promissory notes are of this character, but this is not the case on a sufficiently large scale to obliterate the distinction here drawn, and to reduce to insignificance the difference between the rate of discount and that on short loans.

3. **The rate on "call-loans."**—In large commercial centres bankers frequently lend considerable sums on condition that the money be returned on demand. The funds used for this purpose come chiefly from two sources, namely, from that portion of the reserve which is not needed to meet the regular, daily demands of depositors, and from that portion of the regular discount fund which may chance to be temporarily unemployed. As we have seen, the reserve of a bank consists of two elements, one representing the cash needed in the everyday transactions of its customers and which is entrusted to it simply for safe-keeping, and the other an amount retained as a means of safety and used to meet unforeseeable and irregular demands. This latter fund cannot be safely

invested even in bills, unless it is very large, and the business of the bank's customers is of an unusually certain character, but it may be lent on call. An unemployed surplus in the discount fund may also be lent in this way, but this is not its only possible use. If the portfolio of bills is ordinarily large relatively to the reserve, such a surplus may be invested in short loans instead.

The demand for call-loans comes from people who have opportunities to turn capital over rapidly, and who can, therefore, profitably use funds available only for a few days. The fact that money is borrowed on call does not, of course, necessarily mean that it will actually be "called" within a day or two. Borrowers may be able to retain it for considerable periods of time, but the obligation to return it upon demand involves the necessity of investing it in such a form that cash can be readily realized, if necessary. The investments of bill-brokers and stock-brokers are the most easily disposed of, and it is, therefore, from these two classes chiefly that the demand for call-loans comes. As intermediaries between the drawers of bills and the banks, bill-brokers are able to sell very soon after they buy, or they are able to hold their bills until maturity, provided they can borrow at low rates and are not pressed for payment. Stock-brokers are in much the same situation, though as a rule they are expected to settle at regular intervals. In case of necessity, however, they can throw their securities upon the market and realize upon them at once.

The rate on call-loans is ordinarily low, but at times rises to astonishing heights. Banks can afford to lend the funds above described at any price which will more than pay the expenses involved, because otherwise they constitute dead property and bring in no income at all. Ordinarily brokers can afford to pay low rates only, because

they trade on very small margins and take heavy risks. If they were obliged to pay even ordinary discount rates, the total expense of their business might more than offset the difference between the prices at which they buy and sell. The extraordinarily high rates on call-loans which are sometimes observed are due to severe monetary stringency, such as usually accompanies the panic point of a crisis. At such times brokers find themselves between the horns of a dilemma. Their loans are called by the banks which are in need of their reserve funds and more, and the shortage of money makes it difficult and sometimes impossible to sell bills and stock-exchange securities at any price. Brokers will then bid extremely high in order to save themselves from failure.

The rate on call-loans is in some respects an excellent indicator of certain commercial conditions, because it is the first to exhibit the effect of sudden changes and is the most sensitive of all the rates. The slightest pressure upon the money market is certain to affect it, and every degree of increase is sure to be registered in a higher rate. At such times the banks resort first to their loans at call, and may demand them all, if the situation becomes serious. This rate is also very sensitive to stock-exchange conditions, since any unusual operations or events in this quarter increase the needs of brokers for temporary accommodations from the banks, while a sluggish market diminishes their demand. International trade, affecting, as it does, the market for bills, registers its sudden and unexpected fluctuations in changes of this rate. Indeed, it is a kind of commercial danger signal warning the public of any occurrence out of the usual order.

The relation of this to the discount rate is close and often direct, since both may be affected by the same causes. A disturbance in the money market which com-

pels the banks to call their loans may prove serious enough to cause a curtailment of discounts, in which case both rates rise together, though that on call-loans is quite certain to exhibit the greatest fluctuation. Both are apt also to reach their minimum at the same time, since a sluggish market for bills is certain to increase the funds available for call-loans and may decrease the demand for them. As a rule, however, the call-loan rate moves first and most rapidly, the range of its fluctuations is the greatest, and certain of its minor movements may be quite independent.

4. The rate of interest on deposits.—The practice of paying interest on deposits is not universal. The Bank of England and the Bank of France do not indulge in it at all, and the laws governing some of the other large European institutions permit it only under special circumstances. For current accounts few banks pay anything, but on other deposits a low rate of some sort is customary in most cases. For a long time it was the rule of the joint-stock and private banks of England to pay one per cent below the published rate of discount of the Bank of England, but their action in recent years has been more independent and less uniform. In the United States most banks pay interest on time deposits, but the rate varies considerably in different parts of the country, though it is apt to be uniform among the banks of the same city.

The purpose of this payment is to increase deposits and to make them more permanent. Without it banks can expect to attract only the money in daily use and the capital temporarily out of employment, but if the rate paid is sufficiently high, they can attract capital from other forms of investment, and with even a small rate they can secure the use of funds in the hands of people who do not know how to use them or who prefer a small income

from the bank with a high degree of safety to other investments at the time available. The funds left simply for safe-keeping are, moreover, apt soon to be withdrawn, while those for which interest is paid remain for longer periods, since their owners will only withdraw them when an opportunity for a superior form of investment appears. Banks are tempted to pay as high a rate as possible, since with a large loan-fund a very small percentage of profit may produce a greater total than a larger percentage on a much smaller sum, and the higher the rate the less apt are the deposits to be withdrawn.

The danger of this practice consists in the temptation which a high rate offers to make investments of a hazardous character or those unsuitable for banking purposes. If a bank pays a high rate for a considerable portion of its loan-fund, it must seek investments which bring relatively large returns, and these belong usually to one of the two classes above mentioned. People who are unable to offer first-rate security are obliged to pay high rates, as are the promotors of new and uncertain enterprises. But the paper of such people is a dangerous investment for banks, since it is not apt to be paid at maturity, and a certain portion of it not at all, and in times of difficulty it becomes useless as a means of replenishing the reserves. Many stock-exchange securities bring relatively high returns, but, since they generally mature only after long periods of time, and are subject to great fluctuations in value, especially in times of monetary stringency, they do not automatically turn themselves into cash at regular and short intervals, and they subject the banks to great danger and loss when they attempt to realize upon them. Indeed, it is a rule to which there are few, if any, exceptions, that investments which bring large returns are either insecure or unsuitable for banking purposes.

The problem presented by interest on deposits, therefore, is how to steer a middle course. The terms "low" and "high" rates are purely relative, but the only safe rule is to leave a fair margin between the rate on deposits and that of discount on first-class bills. It is certainly not illegitimate or unsafe for a bank to pay such a rate as will leave it a fair profit on first-class bank investments, but beyond this it is dangerous to go. Whenever obligations to depositors in the form of interest charges force investments which the bank would not otherwise dare to make, the rate is too high, and, if even the lowest rate accomplishes this result, the practice should be abandoned entirely. The Bank of England and the Bank of France are probably precisely in this condition. Without the offer of any attraction, except their reputations for soundness and stability, they secure sufficiently large deposits, and, on account of their peculiar duties towards other banking institutions and the public, the payment of interest is probably inadvisable. Whether it is safe to leave this matter entirely to the discretion of bank officials is a question which has been differently answered in different countries. The Bank of Germany is not forbidden to pay interest on deposits, but the total amount of such deposits cannot exceed the aggregate of the capital and the reserve. The Swedish Bank Act of 1897 forbids the payment of interest on deposits by the Riksbank except to those whose discounted bills are held by it. In the United States these rates are frequently regulated by clearing-house associations, and are commonly a matter of agreement between a number of banks.

Regarding the relation of interest on deposits to the charges made for loans no statement in the form of a law can be made. It may be said, however, that the current rate of discount determines what the banks can afford to

pay depositors, though the proportion need not be the same in all cases. A bank whose current accounts form a large proportion of its total deposits can afford to pay a higher rate than one in which this item is relatively small. It is probably true that regarding this relation most banks follow the rule which experience has dictated, unless their action is determined by law or by agreement with other institutions. The rate of discount might be influenced by the interest paid on deposits, instead of *vice versa*, if the rate in the latter case were so high as to influence the nature of bank investments. It is conceivable, of course, that the regular discount fund might be considerably diminished if bankers were compelled to invest an unusual proportion of their means in long-time securities or even in short loans which yield high returns.

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The subject of the bank rates has been nowhere fully and adequately treated, and it is only possible, therefore, to give references on special phases of the question. The rate of discount has been most studied in connection with the English bank rate, and on this subject the most exhaustive work has been published by Mr. R. H. Inglis Palgrave in his book entitled *Bank Rate in England, France, and Germany, 1844–1878*, and in a paper read before the Institute of Bankers, March 2, 1892, entitled "Bank Acts and Bank Rate, 1845–'91." The same subject has also been treated by Mr. Edward Francis Steele in a prize essay published in the *Journal of the Institute of Bankers*, 1890–'91, entitled "On Changes in the Bank Rate: First their causes; and secondly their effect on the money market, on the commerce of the country, and on the value of all interest-bearing securities." Mr. Robert Giffen treats certain phases of the subject in a general way in his essays on "Gold Supply, the Rate of Discount and Prices" and "Bank Reserves," published in the *Second Series* of his *Essays on Finance*. Fluctuations in the English bank rate, especially the autumnal rise, are discussed by Mr. Stanley Jevons in his *Investigations in*

Currency and Finance, ch. v. Interest on deposits is ably discussed by Scharling in his *Bankpolitik*, pt. II, ch. i. Clare's *Money Market Primer*, ch. xii, and his *A B C of the Foreign Exchanges*, chs. xvii–xxvii may also be read with profit in this connection. See also Bagehot's *Lombard Street*, chs. v and vi; and Schraut's *Die Organisation des Kredits*, ch. x.

CHAPTER XIV.

THE THEORY OF BIMETALLISM.

So far as possible up to this point we have attempted to avoid controverted questions, and to expound those principles and laws of monetary science which are regarded as true by the most competent persons. It is now desirable, however, that we should discuss a topic regarding which opinions differ widely. For more than a quarter of a century bimetallism has been a cause of contention in academic and business circles and in legislative halls, and, though practice tends more and more in the direction of gold monometallism, scholars, business men, and statesmen are not yet in agreement regarding it. In the present chapter we shall confine our attention to the theory of the subject, leaving its more practical aspects for subsequent treatment. It is first of all necessary to understand the meaning of the term and the purpose of the advocates of this particular doctrine.

1. **The nature and purpose of bimetallism.**—The word *bimetallism* is used to describe a monetary system in which standard coins of both gold and silver are freely manufactured without any preference whatever being shown by the government towards either metal. It, therefore, involves three things: first, that the public authorities should decide upon some ratio between the two metals; second, that they should agree to accept all the gold and silver bullion of the proper standard presented, and mint it into certain or all classes of coins at the

ratio selected; and third, that they should make such coins full legal-tender for all payments public or private. This system is advocated as a substitute for monometallism, in which one of the metals only is used in the manufacture of standard coins, and in which the other occupies a subsidiary position in the sense that the coins made from it are minted only on government account and with limited legal-tender power, and are maintained at a par with the standard coins by being made redeemable directly or indirectly in them, and by being strictly limited in quantity to the public demand for them in those uses for which they are best adapted. In order to avoid confusion and misunderstanding several points should be carefully noted.

First, the controversy over bimetallism versus monometallism does not involve the question whether both gold and silver shall be used for monetary purposes. In each system coins of both metals play an important part, and no monometallist whose opinion is worth considering proposes the demonetization of either silver or gold, as has often been charged. The question simply concerns the best method of fixing the relation between the two metals in the currency, the bimetallists claiming that both should be put upon a substantially equal footing by the methods of procedure above indicated, while their opponents claim that coin made of one of the metals should be made subsidiary by the processes described in Chapter II. The difference between the two parties in reference to this matter concerns the use of both metals in the manufacture of *standard* coins only.

Second, bimetallism does not involve the necessity of establishing an office for money-changing in the Treasury Department at which the government would freely exchange coins of the one metal for those of the other. It

means only that it shall agree to coin all the silver bullion of the proper standard which people are pleased to bring to the mint into silver coins of the denominations, weight, and fineness established by law, and all the gold bullion brought, into gold coins; that it shall receive in payments coins of either or both kinds without discrimination, and pay out whichever variety of coins it pleases; and that it shall compel everybody else to do likewise by making both gold and silver coins full legal-tender. Naturally the public treasurer is obliged to pay out the kind of money he receives, and it is entirely possible that under a bimetallic system he might be compelled to conduct practically all his monetary operations in one of the metals, and thus be entirely unable to furnish coins of the other metal on demand. Bimetallists do not like to contemplate such a state of affairs, and do not believe that it would ever be realized, but there is nothing in the nature of their system to prevent it. Everything depends upon the mode of its operation.

Third, so far as the present practice of most nations is concerned, the proposition of the bimetallists is that some one of the silver coins, usually the largest, shall be freely minted by the government just as gold coins now are, and that all limitations on its legal-tender power shall be removed. A change in the ratio sometimes is and sometimes is not advocated. In the United States, for example, the bimetallists propose that the silver dollar, which weighs sixteen times as much as would a gold dollar, if one were minted, shall be freely coined for all persons who bring silver bullion nine-tenths fine to any of our mints for that purpose. This coin already possesses the full legal-tender power, and consequently no change in this particular is needed. With us, therefore, the question of bimetallism reduces itself to that of the free coinage

of silver dollars as opposed to their present limited coinage and as opposed to the proposition made by many people that they be completely assimilated to our other subsidiary coins. In France and the other countries of the Latin Union the controversy concerns the status of the five-franc piece, the coinage of which was discontinued in 1878. The bimetallists propose that this coin, the weight of which is to that of a gold coin of the same nominal value as $15\frac{1}{2}$ is to 1, shall be restored to the position it occupied after the monetary convention of 1865, in which France, Belgium, Switzerland, and Italy agreed to coin five-franc pieces as freely as gold. Inasmuch as no coin similar in status to our dollar and the five-franc piece of the Latin Union exists in England and Germany,* bimetallism in those countries would mean the selection of some silver coin, possibly the crown in England and the five-mark piece in Germany, for free coinage, and very likely a change in the weight or the degree of fineness, or both, of the coins so selected.

The purpose of the advocates of bimetallism is to render the standards of the nations more steady in value, and thus to prevent what they regard as unnecessarily great fluctuations in prices, and to counteract the tendency towards appreciation which, they claim, has characterized the gold standards of the world during the last thirty years. Some bimetallists, especially those who have large interests in silver mines, have special reasons of a personal character for their enthusiasm in this cause, but these are unworthy of consideration and should not be permitted to prejudice the case of those who have only

* The thalers of the German Empire occupy a position somewhat similar to our dollars and the French five-franc pieces, but they can hardly be put in the same class on account of the peculiarity of their origin and the fact that in theory at least they are only a temporary element of the currency system.

the public good in view. In order adequately to explain the motives of this latter class, it is necessary to describe their charges against the monometallic system and their theory of the way in which bimetallism would remove or, at least, mitigate the evils for which it is said to be responsible.

2. The bimetallists' arraignment of the monometallic system.—Their chief charges are directed against gold monometallism as it is at present practised, and may be summarized as follows:—

A. Monometallism causes unnecessarily great fluctuations in prices, because it renders the currency of the gold-standard nations quite independent of that of the silver-standard countries and thus prevents a mitigation or neutralization of the effects of changes in the value of the precious metals through mutual readjustments of the demand for them for monetary purposes. Prices must change in the gold-standard countries whenever any radical change in the value of gold takes place, and the same result must follow in silver-standard countries with every change in the value of silver. In his book on "*The Theory of Bimetallism*," Mr. D. Barbour illustrates this point by the following hypothetical case:—

Two nations, each with a population of a million souls, increasing at the rate of ten thousand per annum, use for monetary purposes, the one metal A, and the other metal B. The former has a currency of ten and the latter one of one hundred coins per capita, the ratio between the values of the two metals being as one to ten. Reasoning on the basis of the quantity theory, he assumes that, in order to maintain a fixed level of prices in the two countries, one hundred thousand coins of metal A and one million coins of metal B should be added annually to the currency of

these nations respectively. Mr. Barbour then proceeds as follows:—

"Let us now suppose that metal A is suddenly found in larger quantities, and that the production rises to 200,000 coins yearly.

"If matters had continued in their old course, there would have been 10,100,000 coins at the end of the first year, and prices would have been exactly the same as before. But there are actually 10,200,000 coins in existence; and as there is no greater demand for coins than before, it follows that the coins will fall in value. This is owing to the invariable law which regulates demand and supply.

"We may assume that the metal A continues to be produced in larger and larger quantities until, when the population reaches 200,0000 the currency, instead of being composed of 20,000,000 coins, is composed of 30,000,000 coins, and three coins are actually doing the work that was formerly done by two. In other words, a coin will only purchase two-thirds of what it formerly would have purchased, and the coins composing the currency have become depreciated to the extent of one-third of their former value.

"In the other nation, on the contrary, the increase of currency has been exactly proportional to the work it had to do, and prices have remained the same. The one country has experienced a rise in prices due to oversupply of the material of the currency; the other has had the benefit of stationary prices.

"Before the increase in rate of production of metal A began, one pound of that metal purchased the same amount of wheat that could be obtained in exchange for ten pounds of metal B, and one pound of metal A was exchangeable for ten pounds of metal B. Under the new conditions ten pounds of metal B will still purchase as

much wheat as before, while one pound of metal A will only purchase two-thirds of that amount; it follows that one pound of metal A will now exchange for only 6⅔ pounds of metal B, instead of for ten pounds.

"The result, therefore, has been that there has been a rise of prices in the first nation, and simultaneously an alteration in the rates at which the two metals exchange.

"If we assume that the production of metal B has been decreasing while that of metal A has been increasing, we get a double effect. Prices will have risen in the country that uses metal A, and fallen in the country that uses metal B. Both countries will have suffered from variations in prices, and there will have been also a variation in the ratio in which the two metals exchange against each other.

"It will readily be understood that prices might rise by one-third in the first country, while they fall by one-third in the second country. The total amount of the two currencies taken together would, in this case, be exactly what it ought to be in order that prices might remain stationary; but one country would have one-third too much, and the other one-third too little, and consequently one country would suffer from a rise and the other from a fall in prices.

"At this stage the question naturally arises whether it would be possible by any means so to arrange matters that the excess in one country should balance the deficit in the other, and that both countries should have the benefit of stationary prices.

"Assuming, as before, that the population in each country has increased from 1,000,000 to 2,000,000, and that there has arisen an excess of one-third of the total currency in one country and a deficiency to the extent of one-third in the other, we find that the country which

ought to have had twenty millions of A coins has got 26⅔ millions; the other country required 200 millions of B coins, but has only got 133⅓ millions.

"An obvious remedy for the variations in prices in the two countries is that one-third of the population of the second country should give up the use of metal B and use metal A. If this be done, we shall have two and two-thirds millions of people with 26⅔ millions of A coins, or ten coins per head, and one and one-third millions of people with 133⅓ millions of B coins, or 100 coins per head. As these are the amounts per head required by our hypothesis to maintain equilibrium, prices will neither rise nor fall in the two countries, and the coins will interchange at the rate of 1 to 10 as before." *

The actual method of remedying this difficulty under the bimetallic system is not that suggested in the last paragraph of this quotation, but amounts to the same thing. Before describing it, however, we will mention two other charges against the bimetallic system.

B. For the last thirty years, at least, the appreciation of gold has steadily depressed prices, increased enormously the burdens of debtors, and reduced the average purchasing power of the earnings of wage-workers and the poorer classes generally.

C. Monometallism renders a large amount of our international trade hazardous, since it makes impossible the establishment of a fixed par of exchange between gold- and silver-standard countries.

3. The compensatory action of the double standard.— As a remedy for these evils the bimetallists rely upon what has been called the compensatory action of the double standard. This may be described as follows: Suppose that the ratio established between the weights of gold and

* D. Barbour, Theory of Bimetallism, pp. 20–23.

silver coins of the same nominal value be 16 to 1, and that a change in the market for bullion, due to a fall in the value of silver, temporarily makes the actual ratio 18 to 1. It will now be profitable for all debtors to pay in silver and sell gold coins as bullion, since for every ounce of gold thus sold they can purchase eighteen ounces of silver, and, by carrying it to the mint for coinage, pay as large a debt or make as large a purchase with sixteen ounces as they could have done with the original ounce of gold, and thus make a clear profit of two ounces of silver on every such transaction. It is not, of course, to be supposed that every person would know enough to take advantage of such a situation, or would take the trouble of going into the exchange business if he did see this chance of profit; but we may be sure that the people already in the business, namely, the money-changers, would melt down or export gold coins on as large a scale as possible, and buy silver bullion and take it to the mint for coinage. One result of this procedure would be a large increase in the coinage of silver and a decrease, perhaps a complete stoppage, of the coinage of gold; and a second would be, so say the bimetallists, a large increase in the use of silver for monetary purposes, and a decrease in the use of gold. A change in the relative demand for the two metals would thus be produced which would tend to counteract the effects of the fall in the value of silver, and bring the ratio between the two metals on the bullion market back to that established by law for the guidance of the mint. That is, the increase in the use of the one metal and the decrease in the use of the other for monetary purposes would raise the value of the first and lower that of the second, thus tending to bring the two ratios together. A further argument is needed to show that this compensatory action would be sufficient to make the bullion ratio actually identical

with the legal, and this the bimetallists find in the enormous quantities of gold and silver used for monetary purposes and in the relatively small capacity of the bullion markets to absorb increased quantities of the precious metals without experiencing great fluctuations in their value. Mr. Barbour puts this argument in substantially the following form: The estimated gold coinage of the civilized world a few years ago was 3943 millions of dollars, and of silver coinage 2755 millions of dollars. Is it conceivable that any change in the market ratio between the two metals, due to ordinary or even extraordinary causes, would not be remedied by withdrawing a small fraction of these millions from circulation and throwing them upon the bullion market? By way of illustration Mr. Barbour says, speaking of a bimetallic ratio of 15½ to 1:—

"Let us assume that there is £700,000,000 sterling of gold coin in the world and £700,000,000 sterling of silver coin, and that the annual production of gold and silver is £20,000,000 sterling in each case. Let us further assume that the labour which produced £20,000,000 worth of silver suddenly, owing to the discovery of new and more valuable mines, produces £30,000,000 (at the fixed legal ratio), and that consequently the ratio of the market falls to 1 to 17. Instantly there will be a profit to be made by exchanging gold for silver bullion and bringing the silver to the mint. The £700,000,000 of gold in the currency *plus* the year's production of £20,000,000 would at once compete in exchange for the £30,000,000 of silver just produced; everybody who owned gold, coined or uncoined, would hasten to exchange it for silver at the rate of 1 to 17, and would find his profit in paying his debts and taxes at the rate of 1 to 15½. To suppose that any other ratio than that of 1 to 15½ could be maintained for a single

hour when the holders of £720,000,000 of gold were offering it for £30,000,000 sterling of silver at any rate better than 1 to 15½ is absurd." *

On account of this compensatory action of the double standard, the bimetallists claim that if a sufficient number of nations could be induced to adopt the bimetallic system of coinage, no variation in the relative value of the precious metals could take place. The general level of prices might rise and fall on account of changes in the relative value of gold and silver and other commodities, but, so far as their relations to each other are concerned, no change could take place, since any tendency in that direction would be immediately counteracted by a modification in the relation between the demand and the supply of the two metals brought about by the process just described. The above supposition of a difference between the legal and market ratios, therefore, must be regarded as a hypothetical case, useful as an illustration of the way the law operates, but not in correspondence with facts as they would present themselves under the bimetallic system.

The relation between the compensatory law and the evils of monometallism may be illustrated first by reference to the hypothetical case assumed by Mr. Barbour and explained in the preceding section. Instead of asking one-third of the population of one country to give up the use of metal B for that of metal A, as was suggested in the latter part of the quotation from Mr. Barbour's book, the bimetallists propose that both nations make the coins of both metals full legal-tender at the ratio of 10 to 1. Then the result in the hypothetical case would have been no change of prices in either nation and no change in the ratio between the metals. To quote again Mr. Barbour's words:—

* Theory of Bimetallism, pp. 41, 42.

"If, then, before the rate of production of the two metals began to vary it had been declared that the A and B coins were full legal-tender at the ratio of 1 to 10 throughout both countries, we should, according to the bimetallists, have had $26\frac{2}{3}$ millions of A coins and $133\frac{1}{3}$ millions of B coins forming the currency for four millions of people. The $133\frac{1}{3}$ millions of B coins being worth $13\frac{1}{3}$ millions of A coins, it follows that the value of the total currency is 40 millions of A coins, or, in other words, we have for four millions of people a currency which is of the value of 10 coins of A metal per head. This is the exact amount required by our hypothesis to insure stability of price, and we consequently see that the alternative and optional use of the two metals as money at a fixed ratio secures stability of price, provided that the two metals do actually circulate side by side at that ratio." *

Regarding the appreciating gold standard, which is the chief evil charged against the monometallic system, the claim is that it could be partially and perhaps entirely counteracted by the use of both gold and silver as standard money. In order to restore gold to its former value it would be necessary to adopt such a ratio as would put the compensatory law into operation and cause the substitution on a fairly large scale of silver for gold in the monetary uses of the world; but, in order to prevent future changes, the best that could be done would be to adopt the ratio at the present time ruling on the markets. This ratio could then be maintained for all time, and while it might not entirely prevent any further appreciation, it would at least retard the movement and prevent the fall of prices to so low a level as would be possible under the present system. The argument on this point is substantially the same as that employed in Mr. Barbour's hypo-

* Theory of Bimetallism, pp. 30, 31.

thetical case. The bimetallic system acts as a check upon fluctuations in the value of both metals, but cannot entirely prevent them. As soon as some external force, such as a discovery of new sources of supply, or improvements in the methods of production, begins to affect the value of one of the metals, the action of the compensatory law commences and modifies the demand for it in such a way as to counteract the rise in value, if that is the tendency of the movement, or the fall, if the new force is working in that direction; but the maximum result of this counteraction will be to prevent a change in the ratio of the two metals. It cannot go so far as to make the ratio between the demand and the supply of both metals precisely the same as before. For example, suppose that the production of silver were to increase twenty-five per cent under the bimetallic system, all that is claimed is that the demand for silver for monetary purposes would be increased and that for gold decreased to whatever degree might be necessary to prevent a change in that ratio, but that would not mean a twenty-five per cent change on both sides, which would be required to exactly restore the former ratio of demand to supply. Very likely a twelve and one-half per cent increase in the monetary demand for silver and a corresponding decrease in that for gold would be sufficient, in which case both metals would have experienced a considerable fall in value, but not so great a fall as silver would have experienced, had no counteracting agency been in operation. If no change had taken place meanwhile in the value of commodities, prices would certainly rise, but not in the same degree as in a silver monometallic country under the same circumstances, and, if both metals had previously been appreciating in their relation to other commodities, this tendency would have been checked and perhaps entirely counteracted.

As compared with conditions in a gold monometallic country suffering from an appreciating standard, the situation would be much better, because the decrease in the demand for gold for monetary purposes might just counterbalance the increasing demand or the decreasing supply which was the cause of its appreciation in the gold-standard country.

The advantage of a fixed and unchangeable ratio between the precious metals in the field of international trade is obvious. The chief difficulty at the present time in this branch of trade is the lack of a fixed par of exchange between gold- and silver-standard countries. If bimetallism could maintain a fixed ratio between the two metals, this difficulty would entirely disappear, and exchanges between England and India, or between the United States and China, would be no more hazardous than those between England and the United States at the present time.

4. The weak points in the theory of bimetallism.—The cornerstone of the theory of bimetallism is the doctrine of the compensatory action of the double standard, and its chief strength consists in the fact that the basis of this doctrine is sound and admitted by all. There can be no doubt that under a bimetallic system a substitution of one metal for the other for monetary purposes would be possible and would take place to a certain extent whenever the market value of either was seriously affected. The important question is, how far would this substitution go, and to what extent would the relative value of gold and silver be affected by it? A consideration of this question will reveal one of the weak points in the theory.

The bimetallists assume that gold and silver are indefinitely interchangeable for monetary purposes, and that the only limit to the possible substitution of one for

the other in case of a threatened change of market ratio is the entire discontinuance of the monetary use of the metal which has become relatively dearer. Is this true? Is it not at least conceivable that the dearer metal might still continue to serve as money, but at an enhanced valuation as compared with the cheaper? For example, suppose that, the legal ratio being 16 to 1, the market ratio becomes 18 to 1 on account of a fall in the value of silver, might not gold still continue to be used for monetary purposes, but at a value as compared to silver of 18 to 1 instead of 16 to 1? The bimetallists assume that the law which declares coins of the two metals legal-tender at the latter ratio would prevent this, but in so doing they greatly overestimate the power of a legal-tender law. In spite of such legislation, money-changers, bankers, and others who have occasion to use large quantities of gold for monetary purposes might agree to continue to use it in the form of bullion, but at an enhanced value. Contracts involving the exchange of money which were made before the change would be settled on the basis of the cheaper metal, but not necessarily by means of it, and future contracts could and would be made on the same basis, but might perfectly well be settled in gold at its new value. A contract to pay money under the bimetallic system would not differ materially from that of a farm lease in which the lessee is allowed the option of paying his rent either in wheat or potatoes, one bushel of wheat being regarded as equivalent to two bushels of potatoes for this purpose. If, when pay-day arrives, one bushel of wheat is worth three bushels of potatoes, the farmer will certainly make his payment in potatoes, unless his landlord is willing or prefers to take wheat at its new valuation. If the landlord should really want the wheat and not the potatoes, there is no reason why such an

arrangement should not be made. It might be more convenient for both parties. In like manner, under the bimetallic system, the law gives the debtor the option of paying either in gold or silver at a given ratio, and, in case of a change in bullion values such as we have assumed above, authorizes him to pay in the cheaper metal, but it does not prevent his making other arrangements with his creditor. The question here at issue is really one of facts, and on that account there is plenty of room for difference of opinion. Is there any reason for supposing that under a bimetallic system gold might still continue to be used for monetary purposes, even if its market value in relation to silver were considerably higher than that fixed by law?

In a previous chapter we have attempted to show that gold has certain peculiar monetary uses, and that for these it is better than silver or any other metal. This superiority for certain purposes would not be affected in the slightest degree by the establishment of the bimetallic system, though the use of gold coins in the general circulation at a value different from that expressed by the figures or statements on their faces would be rendered difficult and impracticable for most people. Its use in the payment of international balances and for shipment between different cities in the same country would not be rendered more difficult or less convenient by the fact that its bullion rather than its tale value must be considered. In fact, in international payments its bullion value alone counts, no matter what may be the monetary system, and in great financial institutions like the Bank of England coins are always received by weight in order to guard against loss from abrasion. The fact that gold can be shipped and stored at considerably less cost than silver would give it a preference, for the uses here under consid-

eration, which is quite independent of legal-tender laws and which would not be affected by a divergence between the bullion and the legal ratio under a bimetallic system.

Speculation regarding what would happen if the bimetallic system were introduced and the value of silver should subsequently fall is not the most profitable of occupations, but in this instance it serves to show the weakness of the foundation upon which the bimetallists have constructed their main argument. If the substitution of silver for gold cannot be carried to the extent that they claim, then it becomes highly improbable that bimetallism would be able to maintain a fixed ratio between gold and silver. If it cannot accomplish this, it is powerless to cure the evils of the present system.

Many people believe that the real effect of bimetallism would be to introduce what has been called an alternating standard, now of one metal and now of the other. Since gold and silver are constantly fluctuating with reference to each other, they hold that no ratio established by law could be long maintained, and that the metal which became relatively cheap would be the real standard, the other being used as bullion. Therefore, if now one and now the other metal should become cheaper, as measured by the legal ratio, we should have an alternating standard. This would certainly be the result if the claims of the bimetallists regarding the effect of the compensatory law should not prove true.

Another weak point in the theory of bimetallism consists in the assumption that frequent minor fluctuations in prices are less injurious than greater fluctuations occurring at longer intervals. Even if the compensatory action should be sufficient to maintain a fixed ratio between the precious metals, it could not prevent a change of prices whenever any considerable change in the condi-

tions of production or consumption of either of the metals should take place. Under the monometallic system gold-standard countries would suffer only from fluctuations in the value of gold, and silver-standard countries from fluctuations in the value of silver; but with bimetallism both classes of nations would suffer whenever either metal was affected. All that is claimed for this latter system by its most strenuous advocates is that the effects of any change are lessened by being spread over a larger surface, but it is at least questionable whether this advantage is not dearly purchased at the price of more frequent disturbances. If we grant that during the last thirty years gold has appreciated considerably, and that gold-standard countries have suffered in consequence, we must not forget that, had bimetallism been established during this entire period, these countries would have been exposed to price changes from the numerous and violent fluctuations in the value of silver as well as from the appreciation of gold, the difference being that prices would probably have oscillated up and down at frequent intervals instead of having experienced a gradual and steady downward movement. The choice between these two alternatives is not easy. Some people would doubtless prefer the one, and some the other. Business men in general would select a steady movement in one direction, which can be counted on and provided against, to the uncertainty involved in more frequent and complicated movements in different directions, against which they would be practically powerless to protect themselves.

It must, of course, be admitted that the compensatory action of the double standard might be just sufficient to counteract the tendency of one of the metals to rise in value or of the other to fall, as in the hypothetical case assumed by Mr. Barbour, but such an effect would be the

merest chance, and would rarely, if ever, be experienced.

It is difficult to analyze the effects of any change of prices, and consequently not easy to determine whether one kind is better or worse than another, but a currency change which would still further complicate the situation cannot be recommended. That this would be the effect of bimetallism is certain. It would be next to impossible to determine in a given case precisely how the compensatory law had been operating, and to what extent a given change in prices was due to currency and to what extent to other causes. It is difficult now; it would be practically impossible under bimetallism.

5. National and international bimetallism.—Bimetallists may be grouped into two classes according to the degree of faith they have in the efficiency of the compensatory action of the double standard. Some believe that a single nation, like England, France, Germany, or the United States, would furnish a field large enough for its efficient operation, while others hold that the cooperative action of several nations would be necessary. International bimetallists fear that the substitution of the cheaper for the dearer metal in the currency of a single nation might proceed to the extent of completely displacing the latter without bringing the bullion and the legal ratios together, but they hope and believe that this could not happen if several nations were to cooperate in this matter. Some national bimetallists go to the extent of admitting that they prefer an alternating standard to a continuous single standard of either metal, and do not fear the consequences of a complete disappearance of one of the metals from circulation. They do not hesitate to affirm that as between a relatively cheap and a relatively dear standard they always prefer the former. Such

persons are also willing to defend the proposition that rising prices are a blessing, or at least preferable to falling prices, but they are apt to overlook the fact that, while bimetallism always establishes the cheaper standard, it frequently does so at the expense of an otherwise stable one. Mr. Barbour's hypothetical case shows that under the monometallic system prices may be quite stable in one nation, while they are experiencing a great fall or a great rise in another, and that bimetallism ties the two together in such a way as to make both subject to changes which originate in either one. It is, therefore, possible that under a bimetallic system a nation might be forced to accept a depreciating or an appreciating standard, when with monometallism it might have had a stable one.

REFERENCES.

On account of the voluminous and controversial character of the literature treating of bimetallism only a few representative books and articles will be referred to here. For a more complete bibliography the student should consult Adolph Soetbeer's *Litteraturnachweis über Geld- und Münzwesen insbesondere über den Währungsstreit, 1871–1891*, the bibliographical references in Schönberg's *Handbuch der politischen Ökonomie*, ch. viii, sec. XI; *Das Handwörterbuch der Staatswissenschaften*, articles Goldwährung, Parallelwährung, and Doppelwährung; and Palgrave's *Dictionary of Political Economy*, articles Money, Bimetallism, and Monometallism.

The theoretical aspects of the question are well treated from the standpoint of the bimetallist in the first five books mentioned below.

In favour of bimetallism are the following: William Leighton Jordan's *The Standard of Value;* Leonard Darwin's *Bimetallism;* D. Barbour's *The Theory of Bimetallism and the Effects of the Partial Demonetization of Silver on England and India;* Robert Barclay's *The Silver Question and the Gold Question;* J. Shield Nicholson's *Money and Monetary Problems;* Francis A. Walker's *Money and Bimetallism;* S. Dana Horton's *Silver and Gold*, and

The Silver Pound; Ernest Seyd's *Die Münz-, Währungs- und Bankfragen in Deutschland,* and *Der Hauptirrthum in der Goldwährung;* Arendt's *Die vertragsmässige Doppelwährung* and *Der Währungsstreit in Deutschland;* Albert Schäffle's *Für internationale Doppelwährung;* Adolph Wagner's *Für bimetallistische Münzpolitik Deutschland;* M. Wolowski's *L'Or et L'Argent;* Henry Cernuschi's *La Monnaie Bimetallique;* and Emile de Laveleye's *La Monnaie, La Question Monétaire en 1881,* and *International Bimetallism and the Battle of the Standards.*

Against bimetallism are the following: Robert Giffin's *The Case against Bimetallism;* Lord Farrer's *Studies in Currency;* W. A. Shaw's *The History of Currency, 1 1252 to 1894* J. Laurence Laughlin's *History of Bimetallism in the United States;* J. Howard Cowperthwait's *Money, Silver, and Finance;* Henry Dunning Macleod's *Bimetallism;* Karl Knies's *Geld und Kredit,* v. I, p. 230; E. Nasse's *Die Demonetisation des Silbers* and *Die Währungsfrage in Deutschland;* Bueck's *Beiträge zur Währungsfrage;* Hans Kleser's *Die deutsche Währungsreform und ihre Gegner,* and *Währungs- und Wirtschaftspolitik;* Moritz Meyer's *Gold- oder Doppelwährung;* and Frère-Orban's *La Question Monétaire.*

A very complete account of the arguments for and against bimetallism, together with an excellent collection of materials for the study of the subject, is contained in the Reports of the Royal Commission of England appointed to inquire into the recent changes in the relative values of the precious metals. The first report was made in 1887 and the second and final report in 1888. M. Frère-Orban and Emile de Laveleye's *La Question Monétaire en Belgique en 1889* also presents both sides of the question, M. Frère-Orban being a monometallist and M. Laveleye a bimetallist. See also Nasse's and Arendt's pamphlets entitled *Der Währungsstreit in Deutschland.*

CHAPTER XV.

THE HISTORY OF BIMETALLISM.

In order to appreciate the present status of the controversy over bimetallism and the practical aspects of the question, some knowledge of the world's experience with the double standard is necessary. Not only are questions of fact involved in the theory of the subject, but the attitude of the different states towards it is determined much more by historical precedents and actual conditions than by theoretical considerations. In the present sketch only an outline of the history of bimetallism can be presented, and more space must be given to the statement of the results of experience than to the details.

At the outset it should be stated that bimetallism existed as a fact long before any theory of the subject was devised. It was not indeed until quite late in the nineteenth century that it became a question for academic discussion, and the use of the word *bimetallism* belongs to still more recent times. The formal histories of the subject do not usually go back beyond the opening years of the nineteenth century, but, though the early experience is not so instructive as the later, some knowledge of it is necessary to a complete understanding of the subject, and we shall, therefore, devote our first section to it.

1. **Early European experience.**—From the beginning of the fourteenth to the early years of the nineteenth century every European nation had a bimetallic cur-

rency, in which, however, silver played the largest part. Gold coins were introduced into western Europe by Italian traders as early as the thirteenth century, but they were not much used in commerce before the middle of the fourteenth, and their value was always estimated in terms of the current silver coins. They were not, however, subsidiary in the sense in which we have defined that term, but had full legal-tender power, and were minted in as large quantities as the supply of the metal and the demand for it for other purposes would permit.

The nature and functions of money were not understood in the Middle Ages, and in consequence many of the practices of that period must be attributed to ignorance rather than selfishness or malice, though there was no lack of these latter qualities. The idea most commonly entertained regarding money was that sovereigns possess absolute power over the value of coins, and are quite independent of market conditions. Accordingly, they did not consider it improper to debase the currency if they thought best, and kept the people informed regarding the purchasing and debt-paying power of coins by posting notices in public places, in which they stated the equivalence of the various coins in terms of each other and in those of purely ideal standards. Regarding these ideal standards it is interesting to note that they originated in the belief which we have just mentioned. In early times the precious metals passed in exchange by weight, and the unit of value in every European state was a pound weight of silver. However, when kings began to exercise their supposed power to regulate values, and debased the coinage, they retained the old names for the units, though their former significance had disappeared and a purely ideal conception had taken its place. Thus, in England up to the beginning of the fourteenth century a pound

weight of silver was divided into twenty parts called shillings, and each of these again into twelve parts called pennies, but Edward I. divided the same pound of silver into forty parts and still called each a shilling, and twenty of these shillings a pound. Henceforth the word *pound* meant nothing definite, since the king frequently changed the weight and metallic content of the shilling, but always reckoned twenty shillings to the pound and twelve pence to the shilling. When, therefore, in the public notices of the Middle Ages we meet the statement that such a gold coin was worth so many shillings and so many pence, we know nothing about its real value until we have learned how much silver the coin at that time called a shilling really contained, and when we read that the price of an ounce of silver had risen from 3s. 9d. to 4s., it may mean simply that the weight of the shilling had changed.

In view of these peculiar ideas and practices, it is not surprising that currency conditions in the Middle Ages were much confused, and that they are very difficult to interpret. One fact, however, is clearly discernible, and that is that the attempt to maintain the concurrent circulation of gold and silver coins of full legal-tender power was a complete failure and responsible for the chief monetary difficulties of the times. The records regarding monetary matters relate chiefly to the disappearance now of gold and now of silver coins from circulation, and to attempts to prevent this by changing their equivalence or by recoinage. The cause was sometimes debasement or arbitrary changes in the equivalence of coins by means of royal decrees, and sometimes fluctuation in the value of the metals on the market. After the discovery of America the latter was the most common, since the conditions of production of the precious metals were revolu-

tioized by that event. The exploitation of extraordinary rich mines in Mexico, Peru, and Bolivia increased the estimated value of the world's supply of minted metal from thirty-four to two hundred and forty millions of pounds sterling between 1492 and 1636, changed the market ratio of gold to silver from about 1 to 11 to about 1 to 15½, and increased the per capita circulation of Europe from sixteen to sixty-six shillings.* The stream of gold and silver which flowed from these new mines into Spain and afterwards into every country of Europe was constant, but irregular, and the freedom of its movement was interfered with by inadequate means of transportation and by the attempt of each nation to get all that was possible and to keep all that it got. The result was constant fluctuation in the purchasing power of each of the metals and in their relation to each other, and frequently the greatest difference between the ratios ruling in the different markets at the same time. To keep both gold and silver coins in circulation at the same time under these circumstances was impossible. In spite of the severest penalties and the not infrequent infliction, the money-changers were constantly shipping the coins of one nation into the territory of another where their value was more highly esteemed, and melting down undervalued coins for sale as bullion. A few instances out of many which might be given must suffice.

The ratio between gold and silver changed considerably on the Continent about the year 1519, and almost immediately England began to suffer from the exportation of undervalued coins. After a futile attempt to remedy the difficulty by means of a treaty with Charles V., it was decided to increase the nominal value of the gold coins, and accordingly on the 22d of August, 1526, *crowns*

* L. M.'s "Die geschichtliche Entwicklung des Geldwesens," p. 12.

of the sun, as one species of gold coin was named, were tariffed at 4s. 6d. instead of 4s. 4d., and the ducat was raised from 4s. 6d. to 4s. 8d. Finding that this was not sufficient to check the exportation, on November 5th of the same year all the gold coins were tariffed at a still higher rate, and in 1527 a new coinage was ordered, in which the weight of the silver coins was again changed. That the difficulty still remained is evident from a state paper of 1529, which describes a dispute between English, Italian, Flemish, and Spanish merchants over the effect of the last edict about gold on the exchanges, and in which the writer recommends an increase in the care exercised at the ports to prevent the exportation of gold. About 1539 the ratio between gold and silver had changed on the Continent to such an extent that silver began to leave England instead of gold, and in order to prevent this there was a general retariffing of coins in 1542 and 1544. During the next fifteen years the currency of England was brought into the greatest confusion by the debasements of Henry VIII. and Edward IV., but, after the recoinage ordered by Elizabeth in 1559, honest efforts were again made to maintain an adequate currency of gold and silver, but with the same results as before. Elizabeth issued proclamation after proclamation for this purpose, and in 1601 changed the ratio between gold and silver in the coinage, but unfortunately in the wrong direction. The monetary history of England during the seventeenth and eighteenth centuries is simply a dreary recurrence of complaints against the exportation of coins and of royal proclamations and recoinages for the purpose of preventing it or of turning the tide in the other direction.

In France, Germany, and the Netherlands the course of events was in all essentials the same as that in England. Constant changes in the ratio between gold and silver and

in the rates at which coins were to be accepted was the rule in all these countries down to the nineteenth century. It is not, of course, possible to hold bimetallism responsible for all of this confusion. During the greater part of the period the coins of one nation were legal-tender in the others at rates fixed by royal proclamation, and, since these rates were far from uniform, it was usually possible to make a profit by shipping coins from the nation in which the valuation was low to that in which it was higher. But bimetallism increased these opportunities enormously and imposed upon the statesmen of the period an impossible task. A remedy for the under- or over-tariffing of foreign coins might have been found, but the task of keeping pace with the fluctuations in the market value of gold and silver by changes in the legal ratio through proclamation or recoinage was hopeless from the beginning.

2. Currency reform in England and the act of 1816.— The first change in England's method of dealing with her currency difficulties came in 1774. At that time she was suffering from the double evil of a currency deficient in quantity and in the weight of the individual pieces. Owing to the rates at which foreign coins were tariffed, all the full-weight gold and silver coins were speedily exported or melted down, and light-weight money of both domestic and foreign manufacture was alone in current use. On the advice of Lord Liverpool a remedy was adopted which differed in principle from that which had been employed over and over again in the past. A recoinage of gold was ordered, and it was decreed that the new coins should not be legal-tender if they were underweight; and that henceforth worn and clipped coins should be accepted at their bullion value only. Regarding silver the terms of the act are still more significant. They are as follows: "And be it further enacted . . .

that no tender in the payment of money made in the silver coin of the realm, of any sum exceeding the sum of £25 at any one time, shall be reputed in law or allowed to be legal-tender within Great Britain or Ireland for more than according to its value by weight, after the rate of 5s. 2d. per oz. of silver, and no person to whom such tender shall be made shall be any way bound thereby or obliged to receive the same in payment in any manner than as aforesaid; any law, statute, or usage to the contrary notwithstanding." In this legislation the modern method of maintaining the concurrent circulation of gold and silver coins was clearly foreshadowed and the first step taken towards the introduction of gold monometallism. It was only necessary to still further limit the legal-tender quality of silver coins, and to introduce a considerable margin between their tale and their intrinsic value, as measured in gold, to make them subsidiary in the modern sense of the term, and thus to take away their capacity to drive gold out of circulation and to render their exportation unprofitable.

Nearly half a century passed before these last steps were taken, and in the meantime the country experienced the effects of the suspension of specie payments by the Bank of England. This happened in 1797, and the depreciation of the bank-notes which followed drove both silver and gold out of the country in large quantities, and rendered retail and small transactions of all kinds difficult on account of the scarcity of small change. Tradesmen were forced to issue private tokens and various other forms of unauthorized currency in order to relieve the needs of the situation. It was as a remedy to this state of affairs that the act of 1816 was passed, the preamble of which reads as follows: "Whereas the silver coins of the realm have, by long use and other circumstances, be-

come greatly diminished in number and deteriorated in value, so as not to be sufficient for the payments required in dealings under the value of the current gold coins, by reason whereof a great quantity of light and counterfeit silver coin and foreign coin has been introduced into circulation within this realm, and the evils resulting therefrom can only be remedied by a new coinage of silver money," therefore be it enacted, etc. The substance of the enactment was that a Troy pound of silver, eleven ounces two pennyweights fine, should be coined into sixty-six shillings, but issued to the importer or to the public at the rate of sixty-two shillings per Troy pound, and that all silver coins should henceforth be legal-tender only to the amount of forty shillings or less. A portion of the section relating to this last point is worth quoting on account of the clearness with which it sets forth the intention of Parliament to establish the gold standard. These are the words: "And whereas at various times heretofore the coins of this realm of gold and silver have been usually a legal tender for payments to any amount, and great inconvenience has arisen from both these precious metals being concurrently the standard measure of value and equivalent of property, it is expedient that the gold coin made according to the indentures of the mint should henceforth be the sole standard measure of value and legal-tender for payment without any limitation of amount, and that the silver coin should be a legal-tender to a limited amount only."

The principles established by the act of 1816 have not been violated in spite of the numerous efforts of other nations and of many English citizens to induce the government to reintroduce the double standard. Throughout all the controversies of recent times English statesmen have championed the cause of gold monometallism, and

have been able to point out very substantial advantages enjoyed by reason of adherence to this system. Since 1816 there has never been any doubt regarding the value of a sound bill of exchange on England or regarding the exact meaning of any other contract calling for the payment of pounds, shillings, and pence. As we have had occasion to point out in the preceding pages of this book, this fact has been one of the chief causes of England's long-continued dominance in the field of international finance, and it is highly probable that she owes much of her industrial and commercial progress to the same cause. Whoever may be disposed to doubt this, however, cannot question the fact that this act put an end to the difficulties which had harassed English statesmen for centuries and had been a constant drag upon industry and commerce. After 1816 the currency problems of England concerned her credit and banking systems rather than her coins.

3. Bimetallism in France to 1865.—The experience of France with bimetallism between the years 1803 and 1865 is most instructive because the obstacles which tended to obscure its action in the Middle Ages had by that time been swept away. Though the modern practice of making silver coins subsidiary was foreshadowed as early as 1577, it was not introduced until late in the nineteenth century, and the numerous proclamations and recoinages of the seventeenth and eighteenth centuries exhibit the application of no principle except that involved in the attempt to adjust the legal to the market ratio of the two metals. In 1785 the ratio was finally fixed at $15\frac{1}{2}$ to 1, where it has remained until the present day, and in 1803 the present unit of value, the franc, and the decimal system of reckoning were introduced. Thus in France, since 1803 at least, and until the discontinuance

of the free coinage of silver in 1874, the bimetallic system had every opportunity to exhibit the normal effects of its action. The ratio remained unchanged during the entire period, the mints were opened freely to the coinage of both metals, and both were legal-tender in unlimited amounts.

Since it is the belief of the bimetallists that the compensatory action of the double standard will prevent any marked divergence between the legal and the market ratius of the two metals, we are chiefly interested in noting what French experience teaches us regarding this matter. The following table * gives the yearly fluctuations in the market ratio of gold and silver from 1803 to 1893:—

Year.	Ratio.	Year.	Ratio.	Year.	Ratio.
1803		1833....	15.93	1863....	15.37
to		1834....	15.73	1864....	15.37
1804....	15.41	1835....	15.80	1865....	15.44
1805....	15.79	1836....	15.72	1866....	15.43
1806....	15.52	1837....	15.83	1867....	15.57
1807....	15.43	1838....	15.85	1868....	15.59
1808....	16.08	1839		1869....	15.60
1809....	15.96	to		1870....	15.57
1810....	15.77	1840....	15.62	1871....	15.57
1811....	15.53	1841....	15.70	1872....	15.65
1812....	16.11	1842....	15.87	1873....	15.92
1813....	16.25	1843....	15.93	1874....	16.17
1814....	15.04	1844....	15.85	1875....	16.62
1815....	15.26	1845....	15.92	1876....	17.77
1816....	15.28	1846....	15.90	1877....	17.22
1817....	15.11	1847....	15.80	1878....	17.92
1818....	15.35	1848....	15.85	1879....	18.39
1819....	15.33	1849....	15.78	1880....	18.04
1820....	15.62	1850....	15.70	1881....	18.24
1821....	15.95	1851....	15.46	1882....	18.25
1822....	15.80	1852....	15.59	1883....	18.65
1823....	15.84	1853....	15.33	1884....	18.63
1824....	15.82	1854....	15.33	1885....	19.39
1825....	15.70	1855....	15.38	1886....	20.73
1826....	15.76	1856....	15.38	1887....	21.13
1827....	15.74	1857....	15.27	1888....	21.99
1828		1858....	15.38	1889....	22.09
to		1859....	15.19	1890....	19.17
1829....	15.78	1860....	15.29	1891....	20.92
1830....	15.82	1861....	15.26	1892....	23.72
1831....	15.72	1862....	15.35	1893....	26.49
1832....	15.73				

It will be observed that at no time during the entire period was the legal ratio 15½ to 1 realized upon the mar-

* Shaw, p. 157. Figures taken from Hamburg Exchange Ratio to 1832, from 1833 onwards from the London Bullion Brokers' Ratio.

kets. From 1803 to 1807 an ounce of gold was worth sometimes more and sometimes less than fifteen and one-half ounces of silver; during the next seven years it was worth persistently more, at one time, in 1813, as much as sixteen and one-fourth ounces; then for six years less; and since the latter date, 1819, always and increasingly more. The movements of gold and silver to and from the country was precisely what one would expect. Since from 1819 to 1850 gold was undervalued at the French mint and silver overvalued, it was profitable to import the latter metal and either to export the former or use it for other than currency purposes. Up to 1822 the precious metals were not distinguished in the public rec-

TABLE OF THE MOVEMENT OF SILVER TO AND FROM FRANCE (1822–1875).*

Year.	Net Imports (Francs).	Net Exports (Francs).	Year.	Net Imports (Francs).	Net Exports (Francs).
1822..	125,000,000	.....	1851..	78,000,000	
1823..	114,000,000	.....	1852..	.....	3,000,000
1824..	124,000,000	.....	1853..	.....	117,000,000
.....		.....	1854..	.....	164,000,000
1830..	151,000,000	.....	1855..	.....	197,000,000
1831..	181,000,000	.....	1856..	.....	284,000,000
1832..	60,000,000	.....	1857..	.....	360,000,000
1833..	75,000,000	.....	1858..	.....	15,000,000
1834..	101,000,000	.....	1859..	.....	171,000,000
1835..	74,000,000	.....	1860..	.....	157,000,000
1836..	27,000,000	.....	1861..	.....	62,000,000
1837..	144,000,000	.....	1862..	.....	86,000,000
1838..	120,000,000	.....	1863..	.....	68,000,000
1839..	75,000,000	.....	1864..	.....	42,000,000
1840..	96,000,000	.....	1865..	72,000,000	.....
1841..	117,000,000	.....	1866..	45,000,000	.....
1842..	92,000,000	.....	1867..	189,000,000	.....
1843..	103,000,000	.....	1868..	109,000,000	.....
1844..	82,000,000	.....	1869..	112,000,000	.....
1845..	90,000,000	.....	1870..	35,000,000	.....
1846..	47,000,000	.....	1871..	15,000,000	.....
1847..	53,000,000	.....	1872..	102,000,000	.....
1848..	214,000,000	.....	1873..	181,000,000	.....
1849..	244,000,000	.....	1874..	360,000,000	.....
1850..	73,000,000	.....	1875..	194,000,000	.....

* Shaw, p. 184.

ords of imports and exports, and, hence, it is possible only to give figures for the last twenty-nine years of the period. The table on page 324 covers a longer period, but is inserted in full for future reference.

It will be observed that in every year of the entire period, 1822 to 1851, the net imports of silver were large, and that the opposite movement quite as persistently characterized the next period.

The net importation of gold in the period 1851 to 1867 is quite as striking, that metal being overvalued at the mint during the entire period. The figures are as follows:—

TABLE OF THE MOVEMENT OF GOLD TO AND FROM FRANCE (1822–1875).*

Year.	Net Imports (Francs).	Net Exports (Francs).	Year.	Net Imports (Francs).	Net Exports (Francs).
1822..	4,000,000		1851..	85,000,000	
1823..	.....	19,000,000	1852..	17,000,000	
1824..	37,000,000		1853..	289,000,000	
.....			1854..	416,000,000	
1830..	10,000,000		1855..	218,000,000	
1831..	10,000,000		1856..	375,000,000	
1832..	.....	39,000,000	1857..	446,000,000	
1833..	24,000,000		1858..	488,000,000	
1834..	.....	7,000,000	1859..	539,000,000	
1835..	.....	20,000,000	1860..	311,000,000	
1836..	.....	14,000,000	1861..	.....	24,000,000
1837..	.....	6,000,000	1862..	165,000,000	
1838..	.....	4,000,000	1863..	12,000,000	
1839..	24,000,000		1864..	125,000,000	
1840..	49,000,000		1865..	150,000,000	
1841..	.....	5,000,000	1866..	465,000,000	
1842..	.....	12,000,000	1867..	409,000,000	
1843..	.....	41,000,000	1868..	212,000,000	
1844..	.....	6,000,000	1869..	275,000,000	
1845..	.....	14,000,000	1870..	119,000,000	
1846..	.....	9,000,000	1871..	.....	214,000,000
1847..	.....	13,000,000	1872..	.....	53,000,000
1848..	38,000,000		1873..	.....	108,000,000
1849..	6,000,000		1874..	431,000,000	
1850..	17,000,000		1875..	454,000,000	

* Shaw, p. 183.

The exports of the precious metals are less significant than the imports, because it is not necessary that they

should leave the country when they are undervalued at the mint. They may be sold on the bullion markets at home and absorbed in the arts, or hoarded. Neither do statistics of the gold and silver coins struck at the mints always tell the story of the operation of the compensatory law. It is not necessary that coins issued from the mint should enter into the general circulation. They may be hoarded or exported or even sold upon the bullion market. As indicated in the preceding chapter, it is even possible that gold, undervalued at the mint, may, by special agreement, continue some of its monetary functions, but at its market instead of its legal value. The importation of the overvalued metal, however, is certain, unless conditions are precisely the same in other countries, because in the form of the coins of the country in which there is overvaluation it is worth more than in any other form. It is, therefore, sent to the mints of such a country from all quarters, in accordance with the law by which commodities are impelled to seek the best markets. However, the above tables show that gold was exported in considerable quantities during the years 1834 to 1838 and 1841 to 1847, and that the net exports of silver were very large every year from 1853 to 1864 inclusive. The relative amounts of these metals brought to the mints for coinage also indicate the operation of the bimetallic system, though there was at no time a complete discontinuance of the coinage of either metal.*

Regarding the effects of the divergence between the legal and the market ratios upon the monetary use of these two metals during this period the following statement quoted by Mr. William Shaw † from an official explanation of the reasons for introducing a subsidiary currency into France in 1876 is significant: "The variations

* See Appendix, p. 367. † History of Currency, p. 187.

of the commercial from the legal 15½ ratio remained normal during the years 1824–67. All the same they sufficed to modify greatly the composition of the French circulation. After the predominance of silver, which became marked in 1847, the ratio from 1847–67 introduced gold in a large proportion, and measures had to be taken to retain in France the smaller silver coinage."

The causes of the fluctuations in the relative values of the precious metals must be sought in an analysis of their demand and supply. For the period now under consideration this is a difficult process, owing to the absence of detailed information regarding all the facts involved, and it would be impossible here in any case on account of a lack of space. Three events, however, throw considerable light upon the situation, and will suffice for our purposes. The first is the great increase in the amount of silver produced in the closing years of the eighteenth and the early years of the nineteenth century; the second is the resumption of specie payments by England in 1822; and the third is the enormous increase in the annual production of gold after 1850. During the first eighty years of the eighteenth century the average annual production of silver had been in weight from 21.6 to 31.5 times that of gold, while in the forty years intervening between 1780 and 1820 it was never less than 47.2 times that of gold, and for the ten years 1800 to 1810 averaged 50.2 times as much.* It was natural, therefore, that the value of silver should fall below that established by law in France in 1803, which was not far from the market value at that date. The natural effect of the resumption of specie payments in England was to increase the demand for gold, that being the standard money of the country after the passage of the act of 1816. This fact considered in con-

* Laughlin's History of Bimetallism, 1st ed., p. 42.

nection with the continued large annual production of silver as compared with gold goes far towards explaining why silver did not recover its value during the next thirty years.

The effect of the increased production of gold after 1850 is not questioned by any one. The only marvel is that the value of this metal did not fall to a much lower point than was actually the case. The facts regarding the matter are as follows:* On account of the exploitation of very rich gold mines discovered in Australia and California the annual production of that metal increased from about $15,000,000 in 1840 to an average of more than $137,000,000 for the five years 1850 to 1855, and to an average of more than $143,000,000 for the succeeding five years. It did not fall to so low a figure as $100,000,000 until 1874, and then for two years only. While the production of silver began to increase greatly at about the same period and has continued at a high rate ever since, its proportion to that of gold fell tremendously in 1851 and has never been restored. While in weight it was 50.2 times as great in the decade 1801 to 1810, it was only 4.4 times as great in the period 1851–60, and between six and seven times as great during the next ten years.† The fall during this period in the purchasing power of gold over commodities has been variously estimated, but it was probably not less than nine nor more than fifteen per cent. The change in its ratio to silver is indicated in the table on p. 323. On account of its overvaluation at the mint France received more than her share of this metal, and silver began to disappear from circulation, causing a scarcity of small coins and finally compelling the government to make all silver coins, except the five-franc piece, subsidiary.

* Laughlin, pp. 217, 218.

† Ibid., p. 42.

In 1865 the history of bimetallism in France entered upon a new phase, before describing which, however, it will be well to note some of the early monetary experiences of the United States. Regarding the general results of its operation during the period here under discussion, there can be no question, however much people may differ regarding the explanation of specific phenomena. It did not succeed in preventing divergence between the legal and market ratios of the two metals, and the dominance now of one and now of the other in the circulating medium, and it did subject French commerce to great inconvenience by rendering it difficult and at times impossible to keep in circulation an adequate supply of small change, not to speak of the uncertainty attending the change of the standard in 1851 from silver to gold. As compared with the peaceful course of England, the continued occupation of the French government with harassing coinage questions during the entire century is an object lesson which should not be overlooked.

4. Bimetallism in the United States to 1873.—The experience of the United States with bimetallism admirably supplements that of France because it exhibits the effect of two ratios, one above and the other below that of the French mint. From 1792 to 1834 the mint ratio in this country was 15 to 1, and since the latter date it has been 16 to 1. It will be well, therefore, to separate these two periods in our discussion.

A. *The period from 1792 to 1834.*—The adoption of bimetallism and of the ratio 15 to 1 was chiefly the work of Alexander Hamilton, who was the author of our monetary system. Previous to the passage of the act of 1792, or rather to the execution of the provisions therein contained, our currency consisted of foreign coins, chiefly English and Spanish, and of the mintages and paper

money of the various colonies. It was inadequate in quantity and extremely inconvenient on account of its numerous and varied elements. It was Hamilton's belief that the bimetallic system was necessary in order to secure an adequate supply of the precious metals for coinage purposes, and the ratio 15 to 1 was adopted because it was thought to represent approximately the market value of the precious metals at that time. Two or three years were required after the passage of the act of 1792 before a mint could be constructed and equipped, and the new system actually put into operation, and meanwhile the market ratio changed, silver falling in value relatively to gold. According to Mr. Soetbeer, it was 15.37 to 1 in 1794, 15.55 to 1 in 1795, 15.65 to 1 in 1796, 15.41 to 1 in 1797, 15.59 to 1 in 1798, 15.74 to 1 in 1799, 15.68 to 1 in 1800, 15.46 to 1 in 1801, and 15.26 to 1 in 1802.* Practically from the beginning, therefore, there was a divergence between the market and the mint ratio, and silver was overvalued. Being a very new country, however, situated a long way from Europe, and commerce being but slightly developed, the markets of the United States were sluggish and did not respond quickly to foreign influences. There was a great demand for money, and accordingly both gold and silver were minted in considerable quantities, but in time, and probably as early as 1810,† gold began to disappear from circulation, and ultimately in such quantities as to attract the attention of Congress. From about 1818 on also, the coinage of silver greatly increased, while that of gold relatively, and in some years absolutely, decreased.

The action of the bimetallic system was somewhat obscured and complicated during this period by the circu-

* For the ratio at dates subsequent to 1802 see table on p. 323.

† See Laughlin, chap. iii.

lation of various foreign coins and by inadequately secured bank-notes. Spanish silver dollars were full legal-tender, and, since they contained more silver than the corresponding coins of the United States, they were hoarded by bankers and money-changers or sent to the mint for recoinage, and, since both coins passed at their face value among the people generally, a profitable trade was carried on by sending our silver dollars to the West Indies and transporting hither the heavier Spanish coins. On this account the coinage of silver dollars was suspended in 1805, but the traffic still continued to be carried on with our smaller coins. The result was that only worn and clipped foreign silver coins were in actual circulation, and there was a great dearth of the kind of money needed for ordinary transactions. During the war with England, 1814 to 1816, there was a general suspension of specie payments by the banks of the country, and consequently so great a depreciation of bank-notes that coins of all kinds were driven out of circulation.

Though the situation was much confused by these disorders, the resumption of specie payments in 1818 brought into clear light the effect of the undervaluation of gold at the mint. It did not return to circulation, and the exchanges of the country were practically on a silver basis, and all large payments had to be made in bank-notes. Owing to the general distrust of this latter form of currency, caused by our unfortunate experiences with paper money during colonial times, the Revolutionary War, and the period of suspension, and fostered by President Jackson and his supporters during their fight to prevent the recharter of the second United States Bank, a strong party arose in favour of such a change in the ratio as would bring gold again into circulation. Aided undoubtedly by the discovery of gold-mines in South Caro-

lina, this party was able in 1834 to secure the passage of an act by which the mint ratio was made 16 to 1. Though it was generally known that this was an overvaluation of gold, the desire to restore this metal to circulation was so great that the party in power did not wish to take any chances in the matter, and many probably believed that the tendency of silver was to fall still more in value, and that it was, therefore, best to anticipate to some extent the probable course of events in the future. The change from the old to the new ratio was accomplished by diminishing the amount of pure metal in the gold eagle from 247.5 to 232 grains, the amount of pure silver in the dollar remaining unchanged at 371.25 grains.

B. *The period from 1834 to 1873.* — Whatever may have been the expectations of the framers of the act of 1834, the ratio between gold and silver upon the markets did not greatly change during the next sixteen years, and never became 16 to 1. With the fall in the value of gold which accompanied the greatly increased supply after 1850, it diverged more and more from that point, and did not show any marked tendency to turn in the other direction until about 1867. The result was at first a gradual substitution of gold for silver in the currency, and, after the gold discoveries, the disappearance of silver to such an extent as to seriously interfere with commerce and to cause the issue of private tokens and other monetary devices to take the place of the small coins. This situation compelled Congress again to take up the question of the coinage, and this time the remedy to which England had been forced under similar circumstances in 1816 was adopted, namely, the reduction of the small silver coins to a subsidiary basis. The act by which this was accomplished was passed in 1853, and it diminished by 6.91 per cent the content in pure silver of all coins below the

denomination of a dollar. Heretofore the half-dollars, quarter-dollars, dimes, etc., had contained respectively one-half, one-quarter, one-tenth, etc., of the amount of metal put into the dollar, but henceforth two half-dollars were to contain only 345.6 instead of 371.25 grains of pure silver, and 384 instead of 412½ grains of standard silver, and the other coins in proportion. This act also took away the free-coinage privilege in the case of these coins, and made them legal-tender for sums of five dollars and under only.

The effect of this act was to place the currency of the United States upon a gold basis. Nominally, however, it still remained bimetallic because by law the silver dollar was still authorized to be freely coined at the mint at the ratio with gold of 16 to 1, and its legal-tender power had not yet been removed. Since it was worth a premium of four or five cents per dollar in gold, however, it did not form an element in the currency, and had not done so since 1834.

From 1862 to 1879 legal-tender government notes, issued as a financial expedient during the war between the states, constituted the basis of the currency of the United States, their depreciation having expelled from circulation both gold and silver, even the subsidiary coins. The annals of this period, therefore, are not significant in the history of the operation of the double standard, and could be passed over in silence, were it not for the act of 1873 and the controversy of which it was the occasion in subsequent years. The purpose of this act was to bring together in one code the laws which were in force at the mint and to eliminate their obsolete features, one of which was supposed to be the authority to coin a silver dollar which was then at a premium in gold, and had not been a part of the circulating medium since 1834, and had

played but a very insignificant rôle since 1805. Accordingly in the enumeration of the list of coins authorized to be struck at the mint the silver dollar was omitted, and our currency was thereby made gold monometallic in law as well as in fact.

This act had no immediate effect upon the currency of the United States, and only a subjective one upon the relations between gold and silver in other parts of the world, inasmuch as only inconvertible paper was in circulation at the time. However, it did become significant when we resumed specie payments six years later, and even before, owing to the authorization of resumption by an act passed in 1875 and a sudden drop in the value of silver in the following year, an event which must be explained before we can profitably proceed with our account of the history of bimetallism.

5. The fall in the value of silver after 1875.—The table of ratios on p. 323 shows that the value of silver as measured by gold steadily and persistently fell after 1859, and that its downward pace was greatly accelerated in 1875 and 1876. This was due to great changes in the relation beween the demand and the supply of the two metals caused in part by an increase in the production of silver and a diminution in the amount coined, and in part by a large increase in the use of gold for currency purposes. The statistics of the production of the precious metals given in the Appendix show a steady gain in the proportion of the annual output of silver to gold after 1860. For the five years 1865 to 1870 the annual average increase in the production of silver over that of the preceding quinquennial period was $10,700,000, while in the case of gold it was only $4,725,000. For the next five years the figures for silver show an annual increase of $28,375,000, while those for gold show a decrease of $14,800,000.

In the period 1876 to 1880 the increase for silver was $23,875,000, while the production of gold but little more than held its own. To these figures must be added the annual sales of silver bullion by Germany in the years 1873 to 1879 inclusive, amounting in the aggregate to $141,784,948.* The chief cause of this increase in the production of silver was the discovery of very rich mines in the western part of the United States, especially in Nevada.

On the demand side the case in not so simple, but that there was a falling off in certain quarters and a limitation in others of the field for the extension of the use of silver as money is clear. During the years 1871 to 1876 Germany introduced her present monetary system, which involved a change from the silver to the gold standard. This was accomplished by acts passed in 1871 and 1873, the first authorizing an imperial gold coinage, and the second its substitution, together with a new imperial silver coinage issued on a subsidiary basis, for the old silver coins which had been previously minted by the various states out of which the empire was formed. The amount of silver required for the new coins was very much less than that formerly in circulation, and accordingly a considerable quantity of the metal accumulated in the imperial treasury, a portion of which was sold between the years 1873 and 1879. So far as Germany is concerned, therefore, there was a considerable falling off in the demand for silver, accompanied by an addition to the supply thrown upon the bullion market.

During the entire nineteenth century India served as the chief outlet for the surplus silver of the world. Her capacity to absorb this metal seemed for a time to be unlimited, a peculiar fact due to the custom of hoarding the

* Laughlin, p. 141.

precious metals as a means of saving, and to their extensive use in the manufacture of idols and personal ornaments. During the decade 1857–67 the Indian demand was abnormally great on account of the Sepoy rebellion, the transfer of the government from the East India Company to the crown, the construction of railways and other public works, and the importation of cotton to Europe to take the place of the American exportation temporarily stopped by the war between the states. All of these events gave occasion for the shipment of unusual quantities of silver from Europe to India. About 1867 a marked change in this situation is observable, the imports of silver into India decreasing greatly.* The reason for this seems to have been the disappearance of the main sources of extraordinary demand and the beginning of annual interest payments on the large public debts which the events above mentioned occasioned. These payments were due to England chiefly, and were made by the sale in London of bills of exchange on India, the purchase and shipment of which by people who had debts to pay there to a considerable extent now taking the place of silver. From 1867 on, therefore, there was evidently a relative decrease in the demand for silver from this quarter.

A limitation of the field for the monetary use of silver was caused not only by the events in Germany already described, but also by the reduction of small silver coins to a subsidiary state in the United States and throughout Europe generally, and by limitations placed upon the minting of larger silver coins in the states of the Latin Union and in this country. Before describing the means by which this was brought about, however, we must note the main causes for the increase in the demand for gold,

* See Appendix

which also helps to explain the relative fall in the value of silver.

Reference again to the table on p. 323 will show that the divergence between the bullion and the legal ratios in both France and the United States was favourable to the introduction of gold into the currencies of those countries after 1853. That it was so introduced in large quantities is rendered certain by the statistics of the mints of the two countries and by many other kinds of contemporary evidence. The same may be said of Switzerland and Belgium, whose monetary systems were assimilated to that of France after 1865, and of the Netherlands, Denmark, and the Scandinavian countries whose monetary movements closely followed those of Germany. In this latter country, as we have seen, gold became the standard of value in 1873, and has constituted an important part of the circulating medium ever since. In Italy and Austria the circulation of coin was small during this period on account of the currency of inconvertible legal-tender notes, and in the United States from 1862 to 1879 gold played a smaller rôle for the same reason. It has been estimated that between 1850 and 1876 not far from two billions of dollars' worth of gold were absorbed by the currencies of the various countries.* When it is remembered that before 1850 silver was the chief money metal everywhere except in England, the effect of this change in demand upon the relative values of the two metals will become evident.

In explanation of this great increase in the demand for gold, the chief emphasis must be laid upon the enormous growth of commerce on a large scale since the middle of the nineteenth century. It was this which made

* Laughlin, p. 174.

gold acceptable to all the nations and preferred to silver for all purposes except that of small payments; and it was this, therefore, which more than any other one thing accounts for the changes in legislation which have been noted. Germany was doubtless influenced in her action by the large indemnity in gold which she forced France to pay her as the price of peace in 1871, but it was chiefly because of the belief of her statesmen in the superiority of the gold over the silver standard for modern commercial nations that she demanded the payment of so large a portion of that indemnity in gold.

6. The Latin Union.—We are now prepared to resume our account of the history of bimetallism in France and the United States. Regarding the former country the most important facts to be noticed are connected with a monetary convention or agreement formed with Belgium, Switzerland, and Italy, December 23, 1865. The events leading up to this treaty are, briefly stated, as follows:—

For some years previous to 1865 the unit of value in all these nations had been the franc, and in other respects there was a general similarity between their coinage systems. When gold began to fall in value relatively to silver after the great discoveries of 1849 and 1850 they were all troubled by a scarcity of small coins. Silver money was being rapidly melted down and exported, and the gold coins which took its place were of too large denominations to serve the purposes of small change. The proper remedy for this difficulty was the issue of a subsidiary silver currency, and to this Switzerland resorted in 1860 by an act which reduced the fineness of all her silver coins, except the five-franc piece, to eight-tenths, and made this latter coin her unit instead of the franc. Inasmuch as the similarity of their systems had made

the circulation of the coins of each country common in all the others, these Swiss coins of low intrinsic value began to be substituted for the more valuable ones of the other states, and the latter to be brought to the Swiss mints for recoinage. In order to prevent this, April 14, 1865, the French government prohibited the receipt of Swiss coins at all public offices, and the government of Belgium suggested a conference of delegates from all the countries affected. This met in Paris on November 20, 1865, and the result of its deliberations was the treaty above mentioned.

In accordance with the agreement at that time made, a subsidiary coinage of silver .835 fine, limited in quantity to six francs per capita, was introduced into all these nations, but the five-franc piece was retained as a standard silver coin to be freely minted at the old ratio of $15\frac{1}{2}$ to 1. The double standard was thus retained, but its operation, so far as silver was concerned, was confined to the five-franc pieces.

The commercial ratio between silver and gold in 1865 was not far from $15\frac{1}{2}$ to 1, but, as we have seen, it began to change about two years later, and silver fell very rapidly in 1875 and subsequently. By 1873 this fact began to make itself evident in a large increase in the number of five-franc pieces struck from the mints, in France from 5,000,000 to 154,000,000 francs, and in Belgium from 33,000,000 to 111,000,000 francs.* In the same year Germany began the withdrawal of her old silver currency and the sale of a portion of the surplus, and the countries of the Latin Union with good reason began to fear that, unless speedy action were taken, their gold would disappear, and they would be reduced to a silver

* Laughlin, p. 155.

standard. Another meeting of delegates was, therefore, called, and, as a result, a supplementary treaty went into force in 1874, by which the number of five-franc pieces to be minted was limited in the case of each of the nations concerned to a definitely assigned quota. This policy of restriction was adhered to during the following three years, the assigned quotas, however, being considerably diminished in 1876 and Switzerland refraining from coining any of her quota in 1875 and 1876. These measures, however, were not sufficient to check the outward movement of gold, and in consequence in 1878 the states of the Latin Union completely suspended the coinage of five-franc pieces, and have adhered to this policy to the present day. A good many meetings of delegates have been held since 1878, but their deliberations have been chiefly concerned with the feasibility of placing the gold standard on a still more secure basis and with the obligation of each State to redeem its own silver coins in gold in case of a dissolution of the Union.

7. Bimetallism in the United States since 1873.—Strictly speaking the currency of the United States has not been bimetallic since 1873, but a very close approach to bimetallism was made in 1878 and 1890. The chief source of the increased production of silver, which has been one of the causes of its declining value during the last thirty years, has been the rich mines of our western States, and on this account, since the early sixties, very important private interests in this country have been associated with the fortunes of silver. The principle of protection, which has so long and so persistently dominated the policy of our government in its relation to private interests, very naturally encouraged the owners and others interested in these mines to seek assistance from the State when the value of their product began to fall and the profitable-

ness of their industry to decline. They were greatly aided in their efforts by the people who, still cherishing the monetary fallacies of the greenback period, believed that the quantity of money in circulation and prosperity were related to each other as cause to effect and that the country was suffering from a scarcity of currency. Most of our theorists also believed in the doctrine of bimetallism, and, hence, furnished plausible arguments for the more active partisans. After the passage of the resumption act in 1875, this combination of circumstances produced a strong party in Congress which favoured a return to the bimetallic system by restoring the silver dollar to its status previous to 1873.

It is not possible within the space which can be devoted to the subject here to describe even in outline the struggle which ensued. We can only state the results. In 1878 a compromise measure was enacted into law, known as the Bland Act, which ordered the director of the mint each month to coin into silver dollars of the same weight and fineness as formerly minted, not less than two nor more than four million dollars worth of silver bullion, and which restored to these coins their former legal-tender power. Being the result of a compromise, neither party was satisfied with this act, but under it we resumed specie payments January 1, 1879, and, owing to a fortunate combination of circumstances and devices, our commerce was able to make use of this constantly increasing mass of overvalued coins, and the gold standard was maintained intact. Lulled into a state of fancied security by our apparent ability to absorb enormous quantities of silver, and pressed by political exigencies, the party which had fought so strenuously against the rehabilitation of the silver dollar in 1878 consented to a still more liberal measure

in 1890, known as the Sherman Act. This was passed as a substitute for the Bland law, and authorized the Secretary of the Treasury to purchase each month four million five hundred thousand ounces of silver at its market price and to pay for it in treasury notes redeemable at his option in silver dollars or in gold. While this measure did not increase to any appreciable extent the amount of silver dollars in circulation, it greatly increased the strain upon our gold standard and piled up an enormous quantity of unused silver in the vaults of the treasury building.

The course of events which resulted in the exhaustion of the government's gold reserve and in the repeal of that portion of the act of 1890 which authorized the purchase of silver bullion has been described in a previous chapter and need not be repeated here. Suffice it to say that since 1893 we have not added to our stock of silver, and that in 1900 Congress passed an act which in many particulars safeguards the gold standard against danger from this source.

8. The international conferences.—Another phase of the history of bimetallism must be presented before the present status of the question can be appreciated. Four international conferences and a number of others of less importance have considered the questions involved in it, and a brief account of their deliberations and results will help us to understand the general course of official opinion on this question and the prospects for the future.

The first of these conferences was held in Paris in 1867 and was the result of a plan formulated by the delegates of the states of the Latin Union at their meeting in 1865 to promote international uniformity of action on monetary matters. The most siginficant fact connected with this conference was the declaration of all the states

which participated, except Holland, in favour of the gold standard. Other proposals aimed at the establishment of an international unit of value. In February, 1868, the English government appointed a commission to consider the proposals of this conference, but the outcome of its deliberations was unfavourable to any change in the English system, though it expressed a strong appreciation of the advantages to be derived from legislation looking towards uniformity of international action. What happened in other states we already know. Germany adopted the gold standard in 1871–73, and her action was followed by the Scandinavian countries, Denmark, and Holland. France and the other states of the Latin Union discontinued the free coinage of five-franc pieces in 1874, and the United States dropped the silver dollar from the list of authorized coins in 1873.

The next conference was the direct result of the fall in the value of silver which became so marked in 1876 and which affected important interests in most countries. In the United States the silver producers of the West saw their profits threatened; in England the exchanges with India were upset, the business of the cotton-manufacturers of Lancashire injured, and investments checked; in India the increased cost of making the annual payments due in England threatened a deficit in the finances; and in France and the other states of the Latin Union a gold famine was imminent. In March, 1876, the English government appointed a commission to investigate the situation, and the Congress of the United States took similar action in August of the same year. The former committee made no proposals by way of remedy, but presented a full statement of the situation, while the committee of Congress reported in favour of the rehabilitation of silver, and started the movement which culmi-

nated in the Bland Act. One clause of this authorized the President to invite the various nations to an international conference on the subject, and the outcome was a second meeting of delegates in Paris, August 10, 1878.

The attitude of the representatives of the various states towards bimetallism indicated a considerable change of opinion since 1867, but a wide diversity of interests and the impossibility of an international agreement for the rehabilitation of silver at this time. The delegates of the United States strongly favoured the free coinage of silver by all the nations at a ratio to be agreed upon. Those of Belgium, Switzerland, and Norway strongly opposed such action, and the English delegate stated that England would not consent to a modification of her system. Germany was not represented at all, and France maintained a waiting attitude. The conference adjourned after declaring that in view of the wide differences of opinion expressed it was useless to discuss the question of an international ratio, and that each nation must be left free to treat silver as it might think best.

The advocates of bimetallism were naturally encouraged over the trend of opinion in their direction since the conference of 1867, and carried on a vigorous agitation, especially in the United States, France, and Germany. This fact, together with the continuous decline in the value of silver, resulted in a third conference, called, on the joint invitation of France and the United States, April 19, 1881. This time the advocates of bimetallism were very much more numerous, including, besides the delegates of the United States, those of France, Italy, Austria, the Netherlands, and British India. The representatives of England and Germany, however, stated positively that the best that could be hoped from their governments was possible action with a view to increas-

ing the use of silver as money, in case an international agreement for free coinage were made by the other nations, and the delegates of Belgium, Switzerland, Greece, and the Scandinavian countries declared against bimetallism. Therefore, in spite of additions to the forces working for bimetallism, an international agreement seemed as far away as ever. This conference adjourned to meet again April 12, 1882, but it was not reassembled until 1893.

Agitation in favour of bimetallism was continued during the eleven years, an international league having been formed for that purpose. A conference of bimetallists was held at Cologne in October, 1882, which advised Germany to retain the silver she already possessed, and to substitute it in her circulating medium for small gold coins and paper below the denomination of ten marks. It also urged the Bank of England to make use of its right to keep a part of its reserve in silver. A royal commission on the depression of trade, appointed in England in 1886, reported in 1888, one-half of its members favouring and the other half opposing bimetallism. In connection with the Paris Exposition of 1889 a monetary conference was held, which closed, however, without any practical recommendation. In this conference England was not represented.

The Brussels Conference of 1893 was called on the invitation of the United States, and the opinions there expressed indicate that the cause of bimetallism had rapidly lost ground since the last meeting in 1881. Even the President's invitation was couched in language which was not hopeful. It declared the purpose of the conference to be a consideration of "what measures, if any, could be taken to increase the use of silver in the currency systems of nations." Though the delegates of the

United States presented a scheme of international bimetallism, they learned at the beginning that it would be useless to push it to the front, and accordingly most of the time of the conference was devoted to a discussion of two or three plans submitted for an increase in the use of silver for monetary purposes by substituting it for small gold coins and paper of low denominations at that time based on gold. Even these plans, however, were rejected. The delegates of Germany, Austria, and Russia came to the conference instructed by their respective governments not to vote or to express an opinion, and, though uninstructed, those of Roumania, Portugal, Turkey, and Greece took the same attitude. The representatives of France declared that their government would not consent to the free coinage of silver unless the other nations would do likewise, and England's attitude was not materially changed. The conference, therefore, adjourned without any practical result so far as the purpose which called the delegates together was concerned, but not without leaving upon the minds of most people who watched its deliberations the conviction that the cause of international bimetallism was lost.

9. The present status of bimetallism.—Having passed in review the most important aspects of the world's experience with bimetallism, we may now close our discussion with a statement of results, first of all regarding the bearing of the historical facts presented upon the theory of the subject.

The crucial point in the doctrine of bimetallism is the supposed adequacy of the compensatory action of the double standard to prevent a divergence between the legal and the market ratios of gold and silver. Upon this point the testimony of history is clear. Throughout the Middle Ages and early modern times there was nearly

always a lack of uniformity between the market ratio and that established by law in the various countries, and during the nineteenth century, in spite of more settled conditions and a studied attempt by governments to give the compensatory law an unobstructed field for operation, the same experience has been repeated. In order to maintain the concurrent circulation of the two metals, one after the other every nation of Europe and the United States has been compelled to make small silver coins subsidiary, and those which have attempted to retain one silver coin as standard money have been obliged at first to limit the amount coined, and ultimately to discontinue its coinage entirely. At the present time, outside of the silver-standard countries, there is not a single nation which is regularly minting full legal-tender silver coins. That this situation has been brought about by the force of economic law, and in most, if not all, cases against the will, and in spite of the efforts, of the nations most concerned, is evident from the facts presented in the preceding pages.

Many people still believe that bimetallism has never had a fair trial, and that its establishment upon an international basis would vindicate the claim of its advocates regarding the efficacy of the compensatory law. The failure of the experiment made by the Latin Union along this line is not regarded by such people as a demonstration of the futility of international bimetallic agreements, because, they say, the times were then rendered unpropitious for such an experiment by the action of Germany in demanding an enormous war indemnity in gold from France and in throwing upon the bullion market more than half of the silver which had formerly constituted her circulating medium. It must be remembered, however, that the Latin Union was compelled to limit the

coinage of five-franc pieces in 1874, before Germany had sold silver enough to affect the markets materially, and that only a small part of the gold which she had at that time absorbed came from France. Further, in judging of the probable effects of an international agreement at the present time it must not be forgotten that the market for the precious metals was never so sensitive as now. A much smaller difference in price than was formerly required will now cause the movement of metal from one market to another. The cost of transportation is less than formerly, and a much closer connection between the bullion markets of the world has been established by the development of the credit system in its various branches and especially by the extension of international banking. Moreover, the magnitude of international credit transactions is so great that large quantities of gold or silver can be drawn from one nation to another with comparative ease. A nation which should attempt to establish the bimetallic system at the present day would find the task a more difficult one than it was twenty or even ten years ago.

It is idle to speculate regarding what would happen if all the great nations of the earth should unite in the free coinage of silver at a common ratio, but it may not be out of place here to say that the probability of such action was never more remote than at the present time. The results of the Brussels Conference were certainly sufficiently discouraging to the bimetallists, but the statistics of the production of gold in recent times are even more so. The discovery of new mines of great richness in South Africa, Alaska, and the western part of the United States has so much enlarged the world's capacity to meet a growing demand for that metal that the outcry against an appreciating standard of value has lost much of its

force. There are few people who would not prefer a single to a double standard, if the fear of falling prices could be removed. It is significant of the trend of opinion in very recent times that in 1900 the Congress of the United States, the stronghold of bimetallism for a quarter of a century, was induced to pass a law expressly making gold the standard of value in this country and safeguarding it by provisions which, though inadequate, are a long step in the right direction.

REFERENCES.

The literature on the history of bimetallism is voluminous, but most of it is controversial and fragmentary in character. The following books are general and cover large portions of the entire field: W. A. Shaw's *The History of Currency, 1252 to 1894.* While this is a hard book to read, it is filled with valuable facts and observations and systematically covers the entire period from the thirteenth century to the last decade of the nineteenth, and includes the history of currency in all the important countries of continental Europe as well as in England and the United States. The following three books by Mr. Ottomar Haupt also contain a large amount of historical material relative to various countries: *Währungs-Politik und Münzstatistik; L'Histoire Monétaire de Notre Temps;* and *The Money Question in 1892.* See also James Maclaren's *A Sketch of the History of the Currency.*

On the experience of the United States the best book is J. Laurence Laughlin's *The History of Bimetallism in the United States.* It was first published in 1886, but it has been brought up to date in more recent editions. It covers the entire period from the passage of the act of 1792, and explains in detail the various coinage acts which have been passed since that date and the influence of the production of the precious metals and of the legislation of European countries upon our currency. For the period since the Civil War see also Noyes's *Thirty Years of American Finance.*

The history of bimetallism in France, Belgium, Switzerland, and Italy is usually treated in books on the Latin Union. The latest of these and the most complete is Henry Parker Willis's

A History of the Latin Monetary Union. Appendix III of this book contains a valuable bibliography. Others are: L. Bamberger's *Die Schicksale des Lateinischen Münzbundes;* and Ad. Burckhardt-Bischoff's *Die Lateinische Münz-Convention und der Internationale Bimetallismus*, which, however, treats the subject chiefly from the standpoint of Switzerland and is not so useful as either of the others for the purposes of most students. H. Cernuschi's *Le grand Procès de l'Union monétaire latine* and O. Noel's *La Question monétaire et l'Union latine* treat of the experiences of the Latin Union itself, especially of the circumstances which led at first to the limitation and finally to the discontinuance of the coinage of the five-franc pieces.

On the statistics of the production of the precious metals and fluctuations in their market ratios the chief authority is Soetbeer's *Edelmetall-Production und Wertverhältnisse von Gold und Silber*, which, however, brings the subject down to the year 1886 only. It should, therefore, be supplemented by reference to the Annual Reports of the Director of the United States Mint and of the United States Bureau of Statistics. A good critical discussion of the statistics which cover the period 1886–1895 may be found in Ernst Biedermann's *Die Statistik der Edelmetalle*, published in Berlin in 1898. For statistics which differ to some extent from those of Soetbeer see the Appendices to Laughlin's history. On the interpretation of these statistics and the causes of the changes in the value of the precious metals see, besides the references above given, W. Stanley Jevons's *Investigations in Currency and Finance*, chs. ii, iii, and iv; Ernst Seyd's *Der Hauptirrthum in der Goldwährung;* W. Jacob's *History of the Precious Metals;* J. E. Cairnes's *Essays in Political Economy*, chs. i–iv; Michel Chevalier's *De la Baisse Probable de l'Or;* Helferich's *Von den periodischen Schwankungen im Wert der edlen Metalle von der Entdeckung Amerikas bis zum Jahre 1830;* Thomas Tooke and William Newmarch's *History of Prices*, vols. V and VI; and R. Hogarth Patterson's *The New Golden Age.*

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Copies of the various coinage acts of the United States may be found in Dunbar's *Laws of the United States relating to Currency, Finance, and Banking,* in *Laws of the United States relating to Loans, Currency, and Banking* published by the Treasury Department and in the Appendices to Laughlin's History of Bimetallism. For translations of the legislative acts of other countries see the Appendices to Laughlin's History and to Willis's *History of the Latin Monetary Union.*

APPENDICES.

APPENDIX I.

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APPENDIX II.

STATISTICAL TABLES.

A.

Statistics of Production of the Precious Metals.*

Period.	Gold. Total for Period.		Silver. Total for Period.		Percentage of Production by Weight.	
	Ounces fine	Value.	Ounces fine.	Coining Value.	Gold.	Silver.
		Dollars		Dollars		
1493–1520	5,221,160	107,931,000	42,309,400	54,703,000	11	89
1521–1544	5,524,656	114,205,000	69,598,320	89,986,000	7.4	92.6
1545–1560	4,377,544	90,492,000	160,287,040	207,240,000	2.7	97.3
1561–1580	4,398,120	90,917,000	192,578,500	248,990,000	2.2	97.8
1581–1600	4,745,340	98,095,000	296,352,700	348,254,000	1.7	98.3
1601–1620	5,478,360	113,248,000	271,924,700	351,579,000	2.	98
1621–1640	5,336,900	110,324,000	253,084,800	327,221,000	2.1	97.9
1641–1660	5,639,110	116,571,000	235,530,900	304,525,000	2.3	97.7
1661–1680	5,954,180	123,084,000	216,691,000	280,166,000	2.7	97.3
1681–1700	6,921,895	143,088,000	219,841,700	284,240,000	3.1	96.9
1701–1720	8,243,260	170,403,000	228,650,800	295,629,000	3.5	96.5
1721–1740	12,268,440	253,611,000	277,261,600	358,480,000	4.2	95.8
1741–1760	15,824,230	327,116,000	342,812,235	443,232,000	4.4	95.6
1761–1780	13,313,315	275,211,000	419,711,820	542,658,000	3.1	96.9
1781–1800	11,438,970	236,464,000	565,235,580	730,810,000	2.	98
1801–1810	5,715,627	118,152,000	287,469,225	371,677,000	1.9	98.1
1811–1820	3,679,568	76,063,000	173,857,555	224,786,000	2.1	97.9
1821–1830	4,570,444	94,479,000	148,070,040	191,444,000	3.	97
1831–1840	6,522,913	134,841,000	191,758,675	247,930,000	3.3	96.7
1841–1850	17,605,018	363,928,000	250,903,422	342,400,000	6.6	93.4
1851–1855	32,051,621	662,566,000	142,442,986	184,169,000	18.4	81.6
1856–1860	32,431,312	670,415,000	145,477,142	188,092,000	18.2	81.8
1861–1865	29,747,913	614,944,000	177,009,862	228,861,000	14.4	85.6
1866–1870	31,350,430	648,071,000	215,257,914	278,313,000	12.7	87.3
1871–1875	27,955,068	577,883,000	316,585,069	409,322,000	8.1	91.9
1876–1880	27,715,550	572,931,000	393,878,009	509,256,000	6.6	93.4
1881–1885	23,973,773	495,582,000	460,019,722	594,773,000	5.	95
1886–1890	27,306,441	564,474,000	544,557,155	704,074,000	4.8	95.2
1891–1895	39,412,823	814,736,000	787,906,656	1,018,708,000	4.8	95.2
1896.....	9,783,914	202,251,600	157,061,370	203,069,200	5.9	94.1
1897.....	11,420,068	236,073,700	160,421,082	207,413,000	6.7	93.3
1898.....	13,863,620	286,586,500	173,227,864	223,971,500	7.4	92.6
1899.....	14,831,039	306,584,900	167,224,243	216,209,100	8.1	91.9
Total	474,622,592	9,811,321,700	8,657,999,086	11,194,174,800	5.2	94.8

* Quoted from the Statistical Abstract of the United States for 1900, p. 40.

B.

STATISTICS OF COINAGE IN THE UNITED STATES.*

Year.	Gold.	Silver.
	Dollars.	Dollars.
1793–1795	71,485.00	370,683.80
1796	102,727.50	79,077.50
1797	103,422.50	12,591.45
1798	205,610.00	330,291.00
1799	213,285.00	423,515.00
1800	317,760.00	224,296.00
1801	422,570.00	74,758.00
1802	423,310.00	58,343.00
1803	258,377.50	87,118.00
1804	258,642.50	100,340.50
1805	170,367.50	149,388.50
1806	324,505.00	471,319.00
1807	437,495.00	597,448.75
1808	284,665.00	684,300.00
1809	169,375.00	707,376.00
1810	501,435.00	638,773.50
1811	497,905.00	608,340.00
1812	290,435.00	814,029.50
1813	477,140.00	620,951.50
1814	77,270.00	561,687.50
1815	3,175.00	17,308.00
1816	.....	28,575.75
1817	.....	607,783.50
1818	242,940.00	1,070,454.50
1819	258,615.00	1,140,000.00
1820	1,319,030.00	501,680.70
1821	189,325.00	825,762.45
1822	88,980.00	805,806.50
1823	72,425.00	895,550.00
1824	93,200.00	1,752,477.00
1825	156,385.00	1,564,583.00
1826	92,245.00	2,002,090.00
1827	131,565.00	2,869,200.00
1828	140,145.00	1,575,600.00
1829	295,717.50	1,994,578.00
1830	643,105.00	2,495,400.00
1831	714,270.00	3,175,600.00
1832	798,435.00	2,579,000.00
1833	978,550.00	2,759,000.00
1834	3,954,270.00	3,415,002.00
1835	2,186,175.00	3,443,003.00
1836	4,135,700.00	3,606,100.00
1837	1,148,305.00	2,096,010.00

* Quoted from Laughlin's "History of Bimetallism in the United States," p. 249, and the "Statistical Abstract of the United States for 1900," p. 44.

STATISTICS OF COINAGE IN THE UNITED STATES.—*Continued.*

Year.	Gold.	Silver.
	Dollars.	Dollars.
1838	1,809,595.00	2,333,243.00
1839	1,355,885.00	2,176,296.00
1840	1,675,302.50	1,726,703.00
1841	1,091,597.50	1,132,750.00
1842	1,834,170.00	2,332,750.00
1843	8,108,797.50	3,834,750.00
1844	5,428,230.00	2,235,550.00
1845	3,756,447.50	1,873,200.00
1846	4,034,177.50	2,558,580.00
1847	20,202,325.00	2,374,450.00
1848	3,775,512.50	2,040,050.00
1849	9,007,761.50	2,114,950.00
1850	31,981,738.50	1,866,100.00
1851	62,614,492.50	774,397.00
1852	56,846,187.50	999,410.00
1853	39,377,909.00	9,077,571.00
1854	25,915,962.50	8,619,270.00
1855	29,387,968.00	3,501,245.00
1856	36,857,768.50	5,142,240.00
1857	32,214,040.00	5,478,760.00
1858	22,938,413.50	8,495,370.00
1859	14,780,570.00	3,284,450.00
1860	23,473,654.00	2,259,390.00
1861	83,395,530.00	3,783,740.00
1862	20,875,997.50	1,252,516.50
1863	22,445,482.00	809,267.80
1864	20,081,415.00	609,917.10
1865	28,295,107.50	691,005.00
1866	31,435,945.00	982,409.25
1867	23,828,625.00	908,876.25
1868	19,371,387.50	1,074,343.00
1869	17,582,987.50	1,266,143.00
1870	23,198,787.50	1,378,255.50
1871	21,032,685.00	3,104,038.30
1872	21,812,645.00	2,504,488.50
1873	57,022,747.50	4,024,747.60
1874	35,254,630.00	6,851,776.70
1875	32,951,940.00	15,347,893.00
1876	46,579,452.50	24,503,307.50
1877	43,999,864.00	28,393,045.50
1878	49,786,052.00	28,518,850.00
1879	39,080,080.00	27,569,796.00
1880	62,308,279.00	27,411,693.75
1881	96,850,890.00	27,940,163.75
1882	65,887,685.00	27,973,132.00
1883	29,241,990.00	29,246,968.45
1884	23,991,756.50	28,534,866.15
1885	27,773,012.50	28,962,176.20
1886	28,945,542.00	32,086,709.90
1887	23,972,383.00	35,191,081.40

STATISTICS OF COINAGE IN THE UNITED STATES.—*Continued.*

Year.	Gold.	Silver.
	Dollars.	Dollars.
1888	31,380,808.00	33,025,606.45
1889	21,413,931.00	35,496,683.15
1890	20,467,182.50	39,202,908.20
1891	29,222,005.00	27,518,856.60
1892	34,787,222.50	12,641,078.00
1893	56,997,020.00	8,802,797.30
1894	79,546,160.00	9,200,350.85
1895	59,616,357.50	5,698,010.25
1896	47,053,060.00	23,089,899.05
1897	76,028,485.00	18,487,297.30
1898	77,985,757.00	23,034,033.45
1899	111,344,220.00	26,061,519.90

C.

STATISTICS OF COINAGE IN FRANCE.*

Year.	Gold.	Silver.	
		5 Francs.	Total.
1803	10,209,840	22,827,000	23,171,998.00
1804	38,463,980	42,303,315	47,517,195.75
1805	20,474,500	39,181,990	46,385,909.50
1806	38,533,760	22,428,245	25,241,651.50
1807	18,019,920	4,022,115	5,008,903.00
1808	32,311,260	46,911,430	67,833,922.25
1809	15,206,440	39,927,225	44,296,494.00
1810	46,070,600	51,722,400	57,170,216.50
1811	132,135,740	244,737,480	256,399,040.00
1812	97,717,880	155,228,065	160,786,409.50
1813	62,659,680	130,014,265	134,900,313.50
1814	64,544,720	60,788,535	61,244,121.00
1815	55,379,840	37,660,240	37,673,806.00
1816	15,151,280	34,183,345	34,917,526.50
1817	52,197,080	35,044,790	37,143,579.75
1818	95,410,460	12,099,695	12,406,076.25
1819	52,410,660	20,944,005	21,235,077.25
1820	28,781,080	18,061,460	18,436,620.50
1821	404,140	66,775,910	67,533,866.00
1822	4,718,100	98,441,395	100,679,137.75
1823	408,180	80,340,750	82,911,680.00
1824	7,071,700	111,572,835	114,476,007.75
1825	45,616,360	72,869,470	75,203,291.50
1826	925,540	88,732,310	90,835,623.00

* Quoted from Willis's "A History of the Latin Monetary Union," pp. 301–307.

STATISTICS OF COINAGE IN FRANCE.—*Continued.*

Year.	Gold.	Silver.	
		5 Francs.	Total.
1827	3,160,940	149,580,405	153,868,978.25
1828	8,025,740	157,130,665	161,466,133.75
1829	1,118,180	99,645,450	102,642,617.25
1830	23,516,640	118,696,115	120,187,089.75
1831	49,641,380	203,292,395	205,223,764.00
1832	2,046,260	134,305,315	141,353,915.00
1833	16,799,780	154,425,595	157,482,863.00
1834	30,231,200	211,534,020	218,288,384.75
1835	4,550,060	95,811,105	99,666,149.25
1836	5,097,040	41,518,825	43,242,399.25
1837	2,026,740	109,202,540	111,858,697.75
1838	4,940,140	86,240,080	88,489,324.25
1839	20,670,000	71,538,785	73,637,742.00
1840	40,998,240	61,305,885	63,795,527.00
1841	12,375,060	73,299,680	77,517,941.00
1842	1,852,720	65,879,910	68,391,170.25
1843	2,826,600	71,858,950	74,148,998.25
1844	2,742,260	66,975,560	69,134,980.00
1845	119,140	83,903,290	89,967,609.50
1846	2,086,420	42,211,015	47,886,145.50
1847	7,706,020	71,610,030	78,285,157.00
1848	39,697,740	119,052,945	119,731,095.25
1849	27,109,560	203,831,545	206,458,663.90
1850	85,192,390	80,603,390	86,458,485.20
1851	269,709,570	57,496,450	59,327,308.90
1852	27,028,270	69,951,000	71,918,445.50
1853	312,964,020	19,458,160	20,099,488.20
1854	526,528,200	53,075	2,123,887.20
1855	447,427,820	24,305,865	25,500,305.50
1856	508,281,995	45,777,405	54,422,214.00
1857	572,561 225	467,030	3,809,611.30
1858	488,689,635	133,950	8,663,568.70
1859	702,697,790	16,825	8,401,813.80
1860	428,452,425	.....	8,084,198.60
1861	98,216,400	110,490	2,518,049.50
1862	214,241,990	105,645	2,519,397.70
1863	210,230,640	108,435	329,610.50
1864	273,843,765	160,840	7,296,609.90
1865	161,886,835	485,670	9,222,394.50
1866	365,082,925	189,465	44,821,409.00
1867	198,579,510	54,051,560	113,758,539.70
1868	340,076,685	93,620,550	129,445,268.00
1869	234,186,190	58,264,285	68,175,897.00
1870	55,394,800	53,648,350	69,051,256.00
1871	50,169,880	4,710,905	23,878,499.50
1872	.....	389,190	26,838,369.50
1873	.....	154,649,045	156,270,160.00

STATISTICS OF COINAGE IN FRANCE.—*Continued.*

Year.	Gold.	Silver.	
		5 Francs.	Total.
1874	24,319,700	59,996,010	60,609,988.50
1875	234,912,000	75,000,000	75,000,000.00
1876	176,493,160	52,661,315	52,661,315.00
1877	255,181,140	16,464,285	16,464,285.00
1878	185,318,100	1,821,420	1,821,420.00
1879	24,610,540	.....	.....
1880	.....	.....	.....
1881	2,167,000	.....	6,733,445.00
1882	3,742,000	.....	1,159,859.50
1883	.....	.....	.....
1884	.....	.....	.....
1885	289,400	.....	.....
1886	23,586,700	.....	154,379.00
1887	24,668,190	.....	8,910,583.00
1888	554,140	.....	5,763,624.00
1889	17,477,800	.....	370.00
1890	20,602,800	.....	.....
1891	17,422,020	.....	.....
1892	4,514,120	.....	.....
1893	50,943,360	.....	.....
1894	9,831,060	.....	4,000,000.00
1895	108,006,930	.....	8,000,000.00
1896	112,538,240	.....	.....
1897	221,379,540	.....	44,000.00
1898	177,326,540	.....	40,000,000.00
1899	38,639,490	.....	14,852,874.00
Totals, 1803–1899	9,550,127,530	5,060,606,240	5,601,571,998.35

D.

SURPLUS OF IMPORTS OF GOLD AND SILVER INTO BRITISH INDIA.*

Years.	Gold.	Silver.
1835–1836	$ 1,694,590	$ 8,059,480
1836–1837	2,098,620	6,694,410
1837–1838	2,154,350	9,834,720
1838–1839	1,294,625	13,225,650
1839–1840	1,133,215	8,252,355
1840–1841	686,560	7,008,350
1841–1842	828,115	6,416,140
1842–1843	1,055,805	14,762,225
1843–1844	2,032,615	18,477,210
1844–1845	3,550,500	9,942,805
1845–1846	2,722,380	4,662,450
1846–1847	4,234,745	6,891,245
1847–1848	5,195,580	2,470,955
1848–1849	6,744,590	1,569,520
1849–1850	5,584,965	6,368,035
1850–1851	5,766,470	10,586,125
1851–1852	6,338,065	14,326,785
1852–1853	5,861,505	23,025,120
1853–1854	5,307,215	11,528,720
1854–1855	3,656,450	148,000
1855–1856	12,531,225	40,971,875
1856–1857	10,456,070	55,366,235
1857–1858	13,915,365	61,094,740
1858–1859	22,132,265	38,641,710
1859–1860	21,421,170	55,737,815
1860–1861	21,162,845	26,640,045
1861–1862	25,922,125	45,432,280
1862–1863	34,240,795	62,750,755
1863–1864	44,491,530	63,983,595
1864–1865	49,199,820	50,393,990
1865–1866	28,622,380	93,343,365
1866–1867	19,211,640	34,815,370
1867–1868	23,047,335	27,969,805
1868–1869	25,796,760	43,005,110
1869–1870	27,960,585	36,601,685
1870–1871	11,410,605	4,709,685
1871–1872	17,826,720	32,564,135
1872–1873	12,716,810	3,523,220
1873–1874	6,913,190	12,256,915
1874–1875	9,367,675	23,211,010
1875–1876	7,725,655	7,776,775
1876–1877	1,036,750	35,994,360
1877–1878	2,340,645	73,381,675
1878–1879	4,480,865	19,853,470
1879–1880	8,752,470	39,348,715
1880–1881	18,275,995	19,462,870
1881–1882	24,219,920	26,895,250
1882–1883	24,654,355	37,401,135
1883–1884	24,316,580	32,030,765

* Quoted from Laughlin's "History of Bimetallism in the United States," pp. 252–3.

E.

ANNUAL AVERAGE RATES OF DISCOUNT OF THE BANKS OF FRANCE AND GERMANY FROM 1844 TO 1878.*

Date.	Bank of France. An. Aver. of Min. Rate Discount.			Bank of Germany. An. Aver. of Min. Rate Discount.		
	£	s.	d.	£	s.	d.
1844	..	..	..	..	..	..
1845	4	0	0	4	7	0
1846	4	0	0	4	13	7
1847	5	0	2	4	16	10
1848	4	0	0	4	13	3
1849	4	0	0	4	0	10
1850	4	0	0	4	0	0
1851	4	0	0	4	0	0
1852	3	3	7	4	0	0
1853	3	4	9	4	5	0
1854	4	6	6	4	7	5
1855	4	8	11	4	1	5
1856	5	10	2	4	18	10
1857	6	3	3	5	15	7
1858	3	14	0	4	2	7
1859	3	9	4	4	4	3
1860	3	12	7	4	0	0
1861	5	11	1	4	0	0
1862	3	15	1	4	0	0
1863	4	13	1	4	1	6
1864	6	10	7	5	6	5
1865	3	13	11	4	18	11
1866	3	13	6	6	4	5
1867	2	14	2	4	0	0
1868	2	10	0	4	0	0
1869	2	10	0	4	4	11
1870	3	19	8	4	17	7
1871	5	14	3	4	2	9
1872	5	2	9	4	5	8
1873	5	2	10	4	19	4
1874	4	6	2	4	7	8
1875	4	0	0	4	13	7
1876	3	8	2	4	3	3
1877	2	5	3	4	8	7
1878	2	4	2	4	6	9
Average rate of 34 years	4	1	5	4	8	10

* Quoted from Palgrave's "Bank Rate in England, France, and Germany," pp. 88–91 and 98–101.

APPENDIX III.

THE PAR OF EXCHANGE AND GOLD POINTS OF THE CHIEF CENTRES OF FOREIGN EXCHANGE.*

LONDON.

Name of Centre.	Par.	Gold-importing Point.	Gold-exporting Point.
Berlin	20.43	20.53	20.32
Amsterdam	12.107	12.17	12.02
New York	4.866	4.90	4.83
Paris	25.225	25.34	25.12½

PARIS.

London	25.225	25.12½	25.34
Berlin	123.46	122.90	124.14
New York	518.26	515.75	523.05
Amsterdam	208.32	207.16	210.16

NEW YORK.

London	4.866	4.83	4.90
Paris	5.182	5.23	5.16
Berlin	95.28	94.50	96.25

BERLIN.

London	20.43	20.33	20.53
Paris	81.00	80.56	81.37
New York	419.79	415.25	423.30
Amsterdam	168.74	168.25	170.50

* Quoted from Haupt's "Rehabilitation de l'Argent," p. 9.

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